# SMART GROWTH

# FOR COASTAL AND WATERFRONT COMMUNITIES



NOAA    **EPA** United States Environmental Protection Agency    **ICMA** Leaders at the Core of Better Communities    **Sea Grant** Rhode Island

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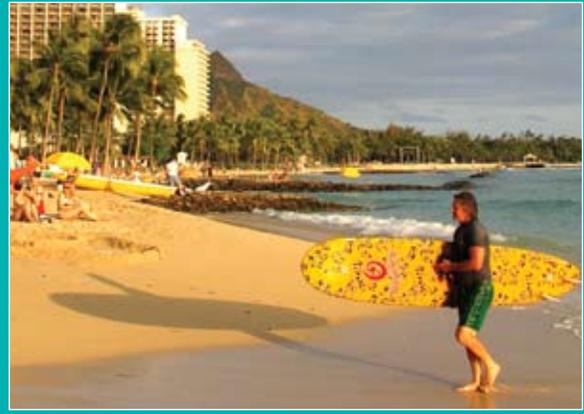# Acknowledgments

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# INTRO

## Smart Growth for Coastal and Waterfront Communities

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**...many coastal and waterfront communities have found that conventional development patterns threaten the assets they treasure most.**

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The natural beauty of the water draws people and development to its shores.

Coastal and waterfront communities have a distinctive sense of place created by their history, as well as by their characteristic sights, sounds, and smells. On the coast, the bellow of tugboats and the salty taste of ocean air; along lakes and rivers, the sound of the water and the feel of brisk waterborne winds—all come together to shape our sense of these special places.

The water, beaches, cliffs, rocky shores, and other natural features attract people and spur development. But many coastal and waterfront communities have found that conventional development patterns threaten the assets they treasure most. Smart growth approaches—guided by a set of principles that help communities grow in ways that expand economic opportunity, protect public health and the environment, and enhance places that people care about—can help these communities accommodate development while protecting their traditional sense of place. Some of these approaches also can help communities be more resilient to hazards created by weather and climate, such as drought, sea level rise, and coastal and inland flooding.

Living near the water has historically been, and is expected to remain, desirable. Lake and riverfront properties are typically in demand. Coastal counties, which cover less than 17 percent of the land area in the United States,[1] are home to about 52 percent of the population and are expected to continue to grow.[2] The ways in which cities, towns, and neighborhoods along the water handle the development pressures they face will affect their environment, economy, and quality of life for decades to come.

How can smart growth strategies help coastal and waterfront communities manage growth and development while balancing environmental, economic, and quality of life issues? How can communities on the water adapt smart growth strategies to fit their unique character? This publication will help communities answer these questions. It is specifically targeted to anyone who plans, designs, builds, approves, or has an interest in development at the water's edge.

Smart growth is defined by 10 principles. These principles provide a framework for making growth and development decisions that yield better economic, environmental, community, and public health results. Developed in 1996 by the Smart Growth Network, a coalition of national and regional organizations that believe where and how we grow matters, the principles are based on the characteristics and experiences of thriving, diverse, and successful communities. These principles help guide growth and development in communities that have a clear vision for their future and understand the values they want to sustain.

The coastal and waterfront elements presented in this document augment the existing smart growth principles to reflect the specific challenges and opportunities characterizing the waterfront, be it on a coast, a river, or a lake. These elements provide guidance for communities to grow in ways that are compatible with their natural assets, creating great places for residents, visitors, and businesses (see table on page 4).

This guide begins with an overview of some of the challenges and opportunities that communities along the water face. Ten sections follow, one for each of the smart growth coastal and waterfront elements. Each section begins with a description of what smart growth looks like and how it may be applied differently along the water—and then offers examples, tools, and techniques for implementing smart growth approaches. The guide includes regulatory approaches as well as voluntary, incentive-based tools.

Although this document is organized by individual elements, the tools and techniques proposed in each element should be used together to support a comprehensive approach to achieve multiple community goals. The guide closes with a glossary of terms and notes. Additional tools and examples are provided at *http://coastalsmartgrowth.noaa.gov*.

| SMART GROWTH PRINCIPLES | SMART GROWTH COASTAL AND WATERFRONT ELEMENTS |
|---|---|
| 1. Mix land uses | 1. Mix land uses, including water-dependent uses |
| 2. Take advantage of compact building design | 2. Take advantage of compact community design that enhances, preserves, and provides access to waterfront resources |
| 3. Create a range of housing opportunities and choices | 3. Provide a range of housing opportunities and choices to meet the needs of both seasonal and permanent residents |
| 4. Create walkable communities | 4. Create walkable communities with physical and visual access to and along the waterfront for public use |
| 5. Foster distinctive, attractive communities with a strong sense of place | 5. Foster distinctive, attractive communities with a strong sense of place that capitalizes on the waterfront's heritage |
| 6. Preserve open space, farmland, natural beauty, and critical environmental areas | 6. Preserve open space, farmland, natural beauty, and the critical environmental areas that characterize and support coastal and waterfront communities |
| 7. Strengthen and direct development toward existing communities | 7. Strengthen and direct development toward existing communities and encourage waterfront revitalization |
| 8. Provide a variety of transportation options | 8. Provide a variety of land- and water-based transportation options |
| 9. Make development decisions predictable, fair, and cost effective | 9. Make development decisions predictable, fair, and cost effective through consistent policies and coordinated permitting processes |
| 10. Encourage community and stakeholder collaboration in development decisions | 10. Encourage community and stakeholder collaboration in development decisions, ensuring that public interests in and rights of access to the waterfront and coastal waters are upheld |

## Coastal and Waterfront Challenges and Opportunities

*Bounded by water, coastal and waterfront communities are challenged to make the best use of limited land while protecting critical natural resources from the potentially damaging effects of growth. These communities must consider a common set of overarching issues when managing growth and development.*

### Resilience to Natural Hazards and Climate Change

Coastal and waterfront communities must be ready to respond to and rebound from hazards created by weather and climate. The uncertainty about exactly how the climate will change should not stop communities from acting to protect property and lives. Although much of the attention on climate change focuses on sea-level rise and coastal storm intensity, other potential effects may also affect inland river and lakefront communities, such as changing water levels and more extreme precipitation patterns that could lead to increased flooding and drought.[3]

Planning with smart growth principles can help communities make efficient investments in buildings and other infrastructure, protect and restore critical environmental areas, and protect public health. In applying these principles to any development project, communities need to explicitly consider natural hazards, including the potential impact of climate change. Resilience to natural hazards, such as storms and storm surges, sea-level rise, and shoreline erosion, is inextricably linked to the siting and design of development, as well as to the built and green infrastructure that supports it.[4]

Coastal and waterfront communities face unique challenges, including how to protect development from shoreline erosion, how to successfully manage cumulative impacts from development, and how to best balance competing uses of the water and the waterfront.

Well-planned and well-maintained natural systems can help protect communities in many ways. For example, natural floodplains can act as protective buffers that absorb floodwater, reducing the speed and amount of flooding, controlling erosion, protecting drinking water supplies and water quality, and insulating buildings and roads from damage.

### Vulnerability to the Combined Effects of Development

The natural environment that draws residents and visitors and defines the economy and character of these communities is vulnerable to both site-specific development impacts and the cumulative and secondary effects of development decisions. For example, the erection of a new dock or pier may have a small natural resource impact on a large estuary, but if adjacent channels are deepened to access the new pier, demand for more docks in nearby areas may increase and cause more extensive natural resource impacts (a cumulative impact). Boat and shipping traffic may also rise over time, causing congestion and additional pollution (a secondary effect). Residential development and road building in upland portions of coastal watersheds can also cause cumulative and secondary coastal impacts, such as reduced freshwater inflow to coastal areas, degraded estuarine water quality, and increased air pollution from increased traffic. The impacts of any single development project may be minor, but when combined with all other development impacts to a watershed over time, they can threaten fragile coastal and waterfront resources and the quality of life. Policies governing growth and development along the water must be sensitive to these unique vulnerabilities and protect the community's valuable natural assets.

### Competing Uses

A growing population creates a greater demand for land for housing, placing pressure on coastal and waterfront industries, recreation, and public access to the water. Non-water-dependent uses, such as residential waterfront development, can compete with water-dependent uses like commercial and recreational fishing and port commerce. Waterfront and coastal communities must find ways to balance these uses along the water's edge.

### Public Trust Doctrine

Communities must consider the public's right of access to the water when making development decisions. The public trust doctrine establishes that all navigable and historically navigable waters, including the lands beneath and resources within, are held in trust by the state for the public's benefit and use. The doctrine protects a range of uses, including commerce, navigation, and fishing. This doctrine is a key factor affecting coastal and waterfront development and must be considered in all land use decisions involving the waterfront.

### State and Federal Framework

This guide focuses on local solutions, but those solutions must be crafted in accordance with the state and federal regulations governing development along the water. Regulatory issues along the water are complex, with laws and regulations beyond the environmental, land use, and transportation rules for inland development. The Coastal Zone Management Act, the Clean Water Act, the Rivers and Harbors Act, and other laws give broad planning and regulatory authority to federal and state agencies. In addition, a variety of federal agencies have regulatory authority over floodplain management, wetland protection, and disaster recovery. Given this complicated web of regulations, coastal and waterfront communities must coordinate with many agencies and make development decisions in a process that is clear and predictable.
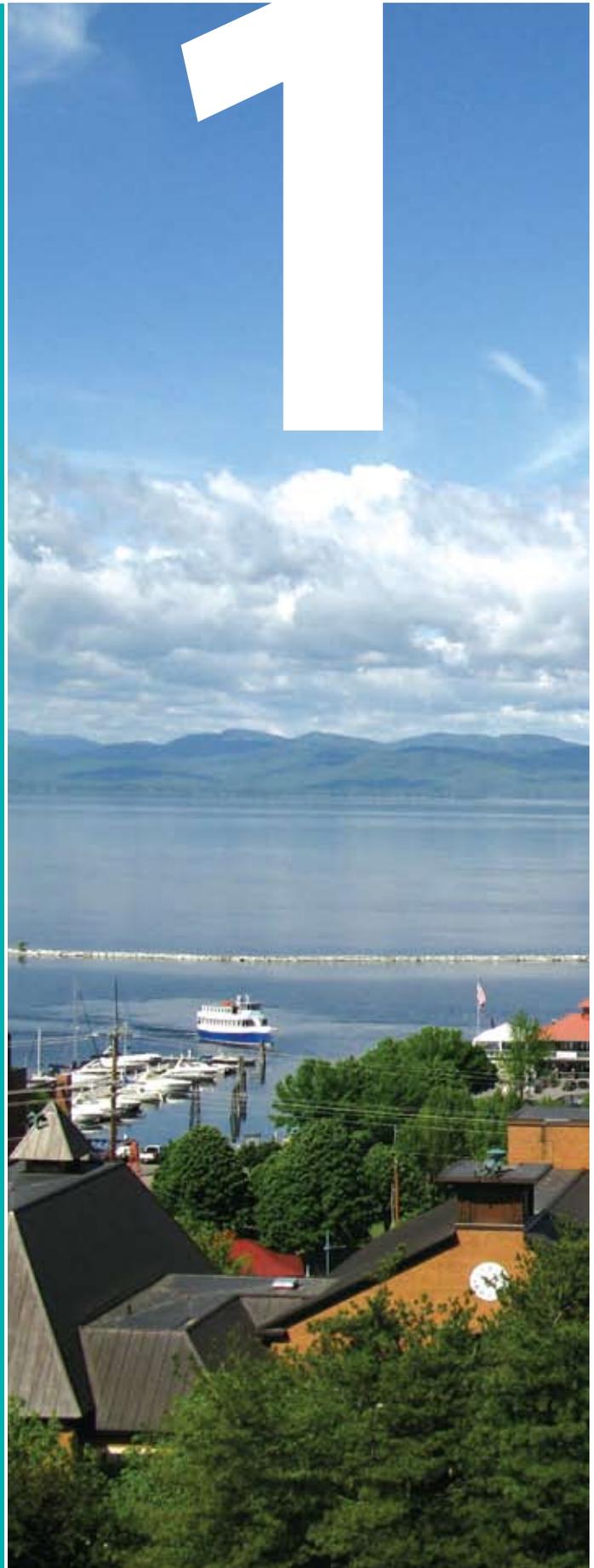
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# ELEMENT

## Mix land uses, including water-dependent uses

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**In coastal and waterfront communities, thoughtfully integrating a mix of land uses with the waterfront can deliver many benefits including generating vibrancy from active, pedestrian-friendly streets, sidewalks, and public spaces.**

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Mizner Park in Boca Raton, Florida, features shops, restaurants, homes, and office space all within easy walking distance.



A mix of restaurants and shops and an active waterfront create a vibrant community in Newport, Rhode Island.

In contrast to conventional development approaches that isolate residential, commercial, and civic uses from one another, mixing these land uses creates vibrant, sustainable communities. Putting homes, stores, offices, schools, and other uses close to one another makes it easier for residents to walk or bike to their daily destinations instead of driving. Communities can use existing infrastructure more efficiently, with the same sidewalks, streets, and utility systems serving homes, commercial centers, and civic places. Having these diverse uses in the same neighborhood generates vibrancy from active, pedestrian-friendly streets, sidewalks, and public spaces.

In coastal and waterfront communities, thoughtfully integrating a mix of land uses with the waterfront can deliver these same benefits. This approach can also incorporate the area's distinctive visual, historical, and natural features into the daily life of residents and visitors, giving people a strong connection to the water. On the coast or waterfront, a mixed-use approach to development may mean weaving water-dependent uses with those not dependent on the water. While some uses may complement one another, others may require buffers, such as warehouses, research facilities, or open space, to separate ports and heavy industry from homes, schools, shops, and other incompatible uses. Integrating compatible, non-water-related uses with the water-dependent ones that have traditionally defined the identity of coasts and waterfronts can provide a more stable economic base. If water-dependent activities slow down because of economic conditions, weather, or seasonal fluctuations, the compatible non-water-dependent uses can help sustain the local economy and continue to serve the daily needs of those who live, work, and play in the community.

The challenge in many waterfront and coastal communities is to provide and protect this mix of uses when faced with changing development conditions. Population growth, demographic changes, and declining natural resources like fish stocks will affect the value and use of waterfront land.[5] In communities experiencing rapid growth and high demand for land, as well as those with slower growth or economic decline, a mixed-use approach to development provides a way to plan for growth that protects the environment and strengthens the economy. In all cases, preserving working waterfronts and public access to the water requires communities to plan ahead and create a vision for future growth that retains this mix of uses.

A waterfront master plan can be an effective starting point to engage the community in envisioning future development and articulating the values that new planning policies will support. In addition, an effective harbor management plan can govern activity in the water, complementing the community's waterfront master plan, or can manage activities in both the water and the adjacent land area.[6] By recognizing the interdependence of land and water uses and crafting rules that value and support water-dependent uses, both types of plans can help communities fulfill their vision. In New York State, for example, waterfront communities integrate these two approaches into a comprehensive local waterfront revitalization program, developed in partnership with the state's coastal management program. The local plan provides a framework for addressing waterfront issues, beginning with a community's vision for its waterfront, and leading to specific projects to achieve the vision. By aligning local resources with state priorities for economic growth and environmental health,

The cities of Tonawanda and North Tonawanda, New York, used their waterfront revitalization plan to enhance boater and pedestrian amenities.



In Portland, Maine, compatible offices are co-located above commercial fishing businesses.



With careful planning, water-dependent uses such as fishing facilities can be managed in harmony with non-water-dependent uses.

communities can leverage public investments for revitalization. Since 1994, over $158 million has been appropriated for at least 1,100 projects in 300 New York waterfront communities to revitalize waterfronts, downtowns, and local economies, create public access, restore habitats and wetlands, and improve water quality.[7]

Other approaches, such as building and zoning codes, can help a community achieve its vision. Zoning, in particular, is critical to managing and maintaining an appropriate mix of water- and non-water-dependent uses. Portland, Maine, adopted a comprehensive approach to zoning for a mix of uses, both vertically (within buildings) and horizontally (across the waterfront), that resulted in a more vibrant working waterfront (see the Portland, Maine, case study below for more detail).

In addition to codes and ordinances, certain fiscal policies can help communities ensure that water-dependent uses remain a viable, stable part of the mix of uses. Tax abatements, tax exemptions, and current-use taxation programs can reduce the overhead costs for commercial activities that are critical to a working waterfront. Tax increment financing districts can generate funds to support infrastructure improvements, such as pedestrian or boating access to the water. Communities can better support their working waterfronts by improving access to the water and ensuring that space along the waterfront exists for support facilities.

By ensuring that water-based activities and compatible non-water-dependent uses are close together, where appropriate, and by protecting and ensuring access to the water for water-dependent uses, coastal and waterfront communities can provide the basis for more sustainable growth that allows residents and businesses to thrive.

CASE STUDY

## Portland, Maine

Portland, Maine, located on Casco Bay, began its waterfront planning effort by identifying a range of land uses appropriate for its commercial harbor (water-dependent, marine-related, and compatible non-marine) and then developing zoning approaches that allowed these uses to be mixed together. The community found that adopting a mixed-use zone that allows compatible non-marine uses to be located above, and in certain areas along side, water-dependent uses was more successful (and flexible) than the previous zoning designation, which restricted the waterfront area solely to water-dependent uses. This zoning change allowed pier and wharf owners to fill vacant properties and generate income by leasing second-floor and other commercial space, which helped pay for the high costs of maintaining commercial marine infrastructure. For instance, Portland's Union Wharf rents dock-level space to commercial fishers and harbor support industries, while the upper-level space is rented to law offices and other businesses. The rent from the non-marine tenants subsidizes the water-based activities on the dock. The mixed-use overlay also allows development of

Portland, Oregon's vibrant downtown is a short walk from the Willamette River.



Baltimore, Maryland's Inner Harbor provides a diverse mix of uses along its revitalized waterfront.

| Key Action Options | Policies, Tools, and Techniques for Implementation |
|---|---|
| *Adopt zoning policies and building codes that support mixed-use development* | • *Create overlay and special area zones that permit horizontal and vertical mix of uses*<br>• *Create form-based codes that prescribe building type, not use* |
| *Plan for the needs of water-dependent recreational, commercial, and industrial users* | • *Employ visioning exercises to determine community support for maintaining working waterfront*<br>• *Develop waterfront master plans to guide land-based uses*<br>• *Develop harbor management plans to guide water-based activities*<br>• *Create special area management plans to supplement existing plans for natural resource protection in specific areas* |
| *Implement fiscal policies and incentives that support a mix of uses* | • *Use current-use zones, tax abatements, and tax exemptions to reduce the cost of critical activities of a working waterfront*<br>• *Create tax increment financing districts to improve infrastructure to support water-dependent activities* |

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appropriate "transitional" uses, such as research facilities, that can buffer marine industries (such as shipping or processing facilities) from nearby residential or commercial uses and provide jobs within walking distance of homes and services. Additionally, retail and restaurant uses are concentrated along Commercial Street, Portland's waterfront drive, away from the working ends of piers and closest to downtown and historic shopping areas. Economic downturns, coupled with long-term declines in fishing and maritime industries, continue to challenge the feasibility of maintaining the waterfront's aging marine-related infrastructure. Portland's innovative application of mixed-use zoning is an important strategy to help generate the funds needed to protect and maintain that built infrastructure.[8]



Portland, ME

# ELEMENT

**Take advantage of compact community design that enhances, preserves, and provides access to waterfront resources**

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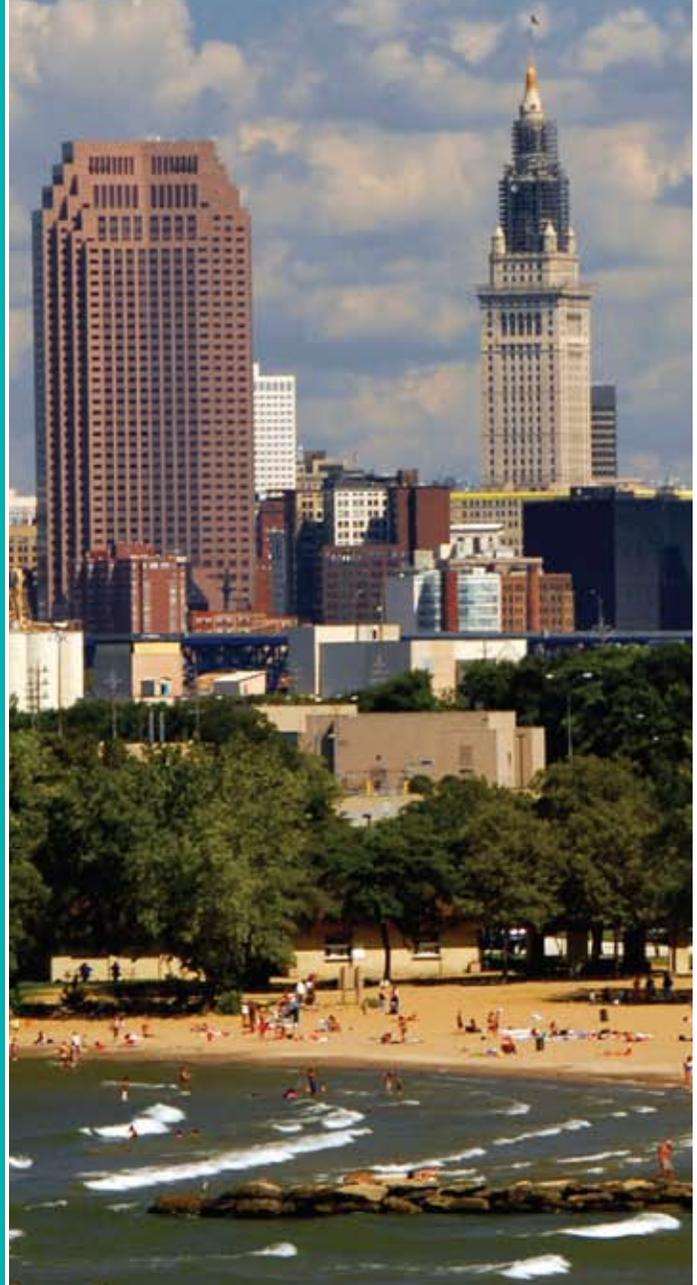
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**Coastal and waterfront communities have a natural boundary—the water—that makes efficient land use critical.**

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Annapolis, Maryland's compact downtown provides easy access to a wide range of amenities.



Increasing density can increase stormwater runoff in the immediate area. Incorporating site-specific design techniques, like this "green street" in Los Angeles, California, can help mitigate impacts.

Compact design of buildings and neighborhoods can help communities use land more efficiently, which has several advantages. Well-designed, appropriately scaled compact development accommodates more uses on less land, which preserves natural areas and requires less funding for building and maintaining infrastructure. Compact communities can provide a wide range of housing choices, from single-family homes to apartments and townhouses, allowing people of different incomes and at different stages of life to live in the same neighborhood. As mentioned in Element 1, when a variety of uses are close together, people are more likely to walk, public places are livelier, and a civic identity develops more readily than in a conventionally planned development. Compact communities also help achieve the population density needed to support more transportation choices, including public transit. The form and density of compact design will vary with its context, with urbanized settings being generally appropriate for more units per acre than rural ones.

Coastal and waterfront communities have a natural boundary—the water—that makes efficient land use critical. Not only is development physically limited within this boundary, but proximity to the water is often of highest value and at greatest risk from natural hazards, requiring an approach to community and building design that provides high structural integrity and the greatest benefit on the least amount of land. Compact community design accommodates increased development in waterfront districts through higher densities and narrower streets. Through smaller building footprints for new construction, reuse of existing buildings, and creative solutions to parking (discussed in Element 8), compact building design can leave undeveloped land to absorb rainwater, thereby reducing the overall level of impervious surface in the watershed. Together, compact community and building design techniques reduce runoff, flooding, and stormwater drainage needs, contributing to better watershed health. For waterfront communities dependent on the health and beauty of neighboring waters, these outcomes are vital.

Since compact design will still include impervious surfaces, communities are well-served by incorporating site-level green infrastructure/low impact development (LID) practices to manage stormwater runoff. Many attractive techniques are available, including rain gardens, tree boxes, and green roofs. Combining these site-specific approaches with the preservation and restoration of larger interconnected natural areas (a green infrastructure network at the community and regional scale) can protect local aquatic resources and help communities be more resilient to the impacts of natural hazards and climate change.

At the confluence of the Willamette and Columbia Rivers, Portland, Oregon, is an excellent example of a waterfront community that has made the connection between how it grows and the health of its rivers. In addition to its many efforts to build compactly within existing neighborhoods, Portland has implemented green infrastructure policies that support compact design. Those policies include incentives, such as stormwater fee discounts and higher allowed density, for new construction projects that include green roofs.[9] Portland has combined these policies with a comprehensive Metropolitan Greenspaces Program that provides recreational opportunities while also protecting the city's water quality, floodplains, and fish and wildlife habitat.[10]

Individual docks can crowd navigation channels, fragment habitat, and impair views of the water. A compact design, like the Skidaway Island, Georgia, community marina (above right), can reduce those impacts.

Waterfront communities are linked to the water by docks, piers, and boardwalks. Applying compact community design principles to these uses can improve both function and aesthetics. The proliferation of individual docks shades and fragments aquatic habitats and impairs the view of the water. Docks also can crowd navigation channels, making it difficult for large and small watercraft to maneuver. Compact designs, including shared access points and community docks, can reduce visual and habitat impacts, navigational hazards, and conflicts among water-dependent uses. These compact designs also can create attractive community spaces. For example, on Skidaway Island near Savannah, Georgia, the Landings community built two community marinas instead of allowing private docks. This compact approach protects marsh habitat, preserves scenic vistas, and lets residents enjoy the island's shorelines free of the crowding from multiple docks. Since then, the state has increasingly seen developers placing deed restrictions on waterfront lots to prevent the building of individual docks in favor of promoting community-based approaches.[11]

Waterfront views are an eagerly sought amenity; communities can protect them by using compact design approaches such as a "wedding cake" approach. Here, the area with the highest development density is a short distance inland at a higher elevation. Building heights gradually decrease as development approaches the waterfront. Putting denser development on higher land with taller buildings protects water views for all buildings as they step down in height to the water. This preserves visual access to the water across the community, creating a compact neighborhood that complements surrounding uses, including the waterfront itself.

Compact development can capitalize on the natural advantages of the waterfront, provide attractive communities by the water, protect valued assets, and improve the overall quality of life. When applied at both the building and community-level, compact design can make better use of the land at the water's edge, as well as the water bordering it.

## CASE STUDY

### Barnstable, Massachusetts

Located on Cape Cod, the town of Barnstable has been experiencing tremendous growth. In particular, Hyannis, one of the town's seven villages, was seeing low-density growth at its edges while its downtown emptied. This pattern strained the town's infrastructure and diminished its historic character. In response, Hyannis developed a strategy that encourages growth in the urban center, which is served by existing sewer and water lines. The strategy includes mixed-use zoning and design guidelines, expedited permitting for downtown development, incentives to shift development from outlying areas to downtown, and improved connections to the waterfront. The town also purchased land to protect drinking-water aquifers and other

| KEY ACTION OPTIONS | POLICIES, TOOLS, AND TECHNIQUES FOR IMPLEMENTATION |
|---|---|
| *Offer incentives that encourage local communities to increase density* | • *Provide floor-to-area-ratio (FAR) bonuses*<br>• *Provide density bonuses*<br>• *Create overlay districts*<br>• *Create design guidelines* |
| *Create walkable communities and emphasize pedestrian access to and along the waterfront* | • *Create public access master plans*<br>• *Use context-sensitive solutions for street designs*<br>• *Prioritize pedestrian use on waterfront streets*<br>• *Create transportation options (e.g., water-based transit, bikes, rail)*<br>• *Create networks to connect the waterfront to parks, greenways, and other open space*<br>• *Develop street standards in neighborhoods to ensure connected grid designs* |
| *Match building scale to street* | • *Employ form-based codes*<br>• *Use zoning and permit approval processes that automatically allow appropriate scale rather than require individual variances for it* |
| *Maintain and increase viewshed for waterfront area* | • *Incorporate tiered development by setting back tallest and highest density development to maintain access and viewshed*<br>• *Use waterfront master plans* |
| *Integrate hazard mitigation into local comprehensive and capital planning and regulations* | • *Engage in hazard mitigation planning*<br>• *Consider hazard mitigation plan findings and recommendations when updating comprehensive plans and regulations* |
| *Encourage green infrastructure approaches at the site, community, and regional scales to increase resilience to natural hazards (including climate change impacts) and better manage stormwater runoff* | • *Assess and protect critical areas as buffers*<br>• *Create a setback from waterfront for natural hazard mitigation*<br>• *Plan for open space preservation (community-scale green infrastructure)*<br>• *Engage in floodplain mapping and protection*<br>• *Employ site-specific green infrastructure/LID applications*<br>• *Use U.S. Environmental Protection Agency's (U.S. EPA) Water Quality Scorecard to align local codes and ordinances with water quality goals[12]* |

important natural areas. The result is a renaissance for Hyannis's downtown. As of 2007, 93 new residential units and 22,000 square feet of commercial space had been created since the initiative began, along with approximately 342 new jobs and $25 million in private investment. Improvements continue, including construction of a harbor-front visitor's center and additional segments for the town's planned harbor walk.[13]

# ELEMENT

**Provide a range of housing opportunities and choices to meet the needs of both seasonal and permanent residents**

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**A comprehensive approach to housing that offers options for seasonal and permanent residents, visitors, and workers provides a strong basis for a vibrant economy.**

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Fernandina Beach, Florida's zoning code allows for residential use on the second floor.



Orenco Station in Hillsboro, Oregon, has won accolades for both livability and design.

As individuals pass through various stages of their lives, their housing needs, as well as what they can afford, vary. Young adults just starting out, families, and retired people all need different types of housing, but because of the way housing is built in many communities, they may not be able to stay in the same neighborhood as their needs and income levels change. Communities with smart growth policies meet these challenges by providing a broad range of housing types, with easy access to jobs, schools, shops, and recreation, to meet the needs of households at varying income levels. Implementing this approach lets communities use infrastructure more efficiently, accommodate the housing needs of all residents, and help everyone, from aging citizens to young people getting their first home, remain in the community.

Waterfront communities face the additional challenge of providing housing for permanent and seasonal residents and workers. Seasonal influxes of visitors and demand for second homes can overwhelm the existing housing supply in resort towns or vacation destinations, driving prices up and adding to the cost premium already associated with land near water. The result is that housing is unaffordable for much of the workforce, such as police officers, teachers, and retail employees, that communities need to grow and thrive. These employees may choose to endure long and costly commutes from less expensive inland locations, generating congestion and pollution. In the long term, affordable housing choices help protect the environment and keep the local economy viable.

For all the challenges that communities have in providing affordable housing, there are a variety of tools to help meet the need. For example, local jurisdictions can use land more efficiently by encouraging flexibility for single family homes, including the construction of accessory dwelling units (ADUs). Detached cottages, spaces above garages, or attic units with separate entrances are all potential homes for seasonal visitors, as well as the elderly, single adults, or young singles and families. These "mother-in-law" apartments can generate seasonal rents for permanent residents and provide affordable options for workers, part-year residents, and seniors.[14] To reap the benefits of ADUs, communities may have to revise their zoning ordinances and building codes and consider the concerns of neighbors, such as the need for increased parking, to ensure that ADUs will not make the look and feel of a neighborhood less appealing. In addition, condo-hotels in a dense, multi-family arrangement can help respond to the demand for second homes and reduce pressure on the existing housing supply. Furthermore, communities can use inclusionary zoning to require developers to construct or pay for new affordable housing units as part of the approval of new developments. Communities that have found the greatest success with inclusionary zoning have offset the additional cost of these requirements with density bonuses for the developer, thereby allowing the affordable units to be constructed at little or no net cost to the builder or the local government.

Where consistent with state and local regulations, well-managed marinas and mooring fields provide another opportunity to increase housing options. Live-aboard vessels can provide an alternative for seasonal and permanent residents in areas with high land and housing costs, although environmental and public access impacts must be addressed.[15,16] Many marinas in Maryland accommodate live-aboard

The award-winning Katrina cottage was developed in response to the hurricanes of 2005 to meet the demand for affordable housing while respecting the architectural tradition of the Gulf region.



Houseboats on Lake Union provide an alternative housing option for Seattle, Washington, residents.



Winooski, Vermont's downtown revitalization effort added much-needed housing, stores, and public space.

vessels and protect coastal water quality from adverse effects by adopting environmentally sound operating and maintenance procedures as part of the Clean Marina Initiative.[17]

These land- and water-based approaches help ease pressure to convert undeveloped land into new housing construction, and better distribute the demand for housing over a larger number and wider range of housing types. Yet the coastal premium in home prices requires policies that go beyond expanding the supply of affordable housing to also maintain affordability over time. Deed restrictions can be attached to units developed with public funds to limit the share of appreciation that homeowners can claim upon resale of the units, thereby guaranteeing a permanent supply of affordable housing to local low-wage employees.

In coastal and waterfront economies dependent on tourism, the need to provide affordable workforce housing can be an opportunity to galvanize support among a broad range of stakeholders, including environmentalists, business owners, civic leaders, and other community members. A comprehensive approach to housing that offers options for seasonal and permanent residents, visitors, and workers provides a strong basis for a vibrant and sustainable local economy.

CASE STUDY

## Santa Cruz, California

Like many communities in northern California, Santa Cruz has seen its housing costs increase dramatically, in part because of its coastal location on Monterey Bay and its desirability as a vacation, retirement, and second-home destination. In response to concerns over how to retain teachers, police officers, and service workers, the city created an Accessory Dwelling Unit (ADU) Development Program.[18]  The program makes it easier for homeowners to build a new structure or to convert all or part of a garage into an ADU. The city revised its zoning ordinance, commissioned design guidelines, and produced architect-generated building prototypes that have been pre-reviewed by city departments, thereby reducing processing time, planning fees, and design costs. To encourage affordable housing, loan and fee waiver programs are available to homeowners who will rent the unit at an affordable level. The program has been

The High Point Redevelopment Project in Seattle, Washington, increased low income housing opportunities by 43%.

Housing can be conveniently located above commercial space.

| KEY ACTION OPTIONS | POLICIES, TOOLS, AND TECHNIQUES FOR IMPLEMENTATION |
|---|---|
| *Provide a range of housing types* | • *Create inclusionary zoning, which requires new construction to include a portion of affordable units*<br>• *Create increased zoning for construction of multi-family and rental units*<br>• *Allow increased density near waterfront amenities*<br>• *Consider vessel live-aboards, while addressing public-access issues and environmental impacts*<br>• *Provide seasonal rentals and time-shares* |
| *Promote affordable housing for permanent and seasonal residents* | • *Provide workforce housing accommodations (e.g., single-room occupancy projects, college dorm conversions)*<br>• *Develop live-near-your-work programs for permanent and seasonal workers*<br>• *Allow accessory dwelling units* |
| *Maintain affordable housing for permanent and seasonal residents* | • *Have community land trusts retain ownership of underlying land while the house is bought and sold, lowering cost for buyers and ensuring long-term affordability*<br>• *Write deed restrictions to maintain permanent affordability* |

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successful. In 2003, the program's first full year, 35 accessory units were built—a fourfold increase over the eight units built in 2001. Between 40 and 50 new accessory unit building permits have been issued each year since the program began.[19] (See photo (left) and illustration (right) for example of garage conversion.)
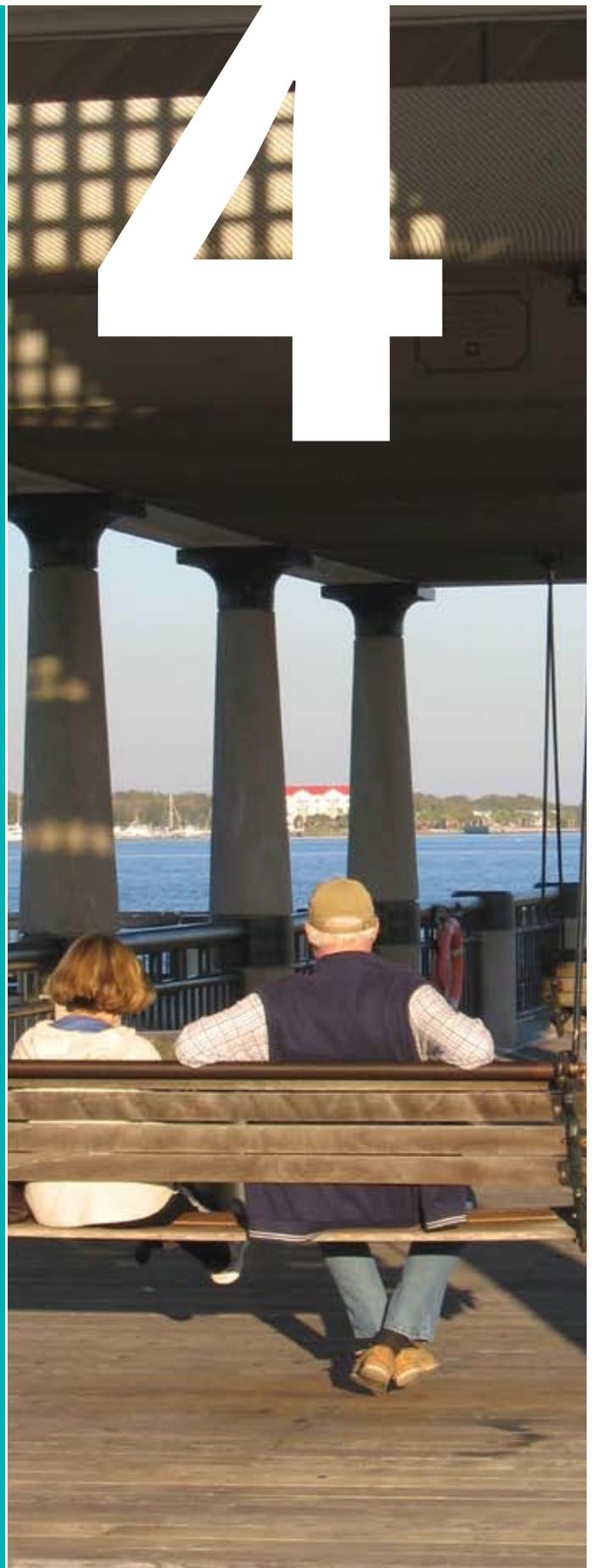




Santa Cruz, CA

# ELEMENT

**Create walkable communities with physical and visual access to and along the waterfront for public use**

**4**

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**The pedestrian connection to the water can be improved physically, with better street, path, and trail connections, and with access points to the water that are open to the public.**

"

Visitors to Annapolis, Maryland, can stroll within easy sight of the harbor.



The beach is a short walk from downtown Lewes, Delaware.

In a walkable community, trips by bicycle or on foot are viable transportation alternatives to the car. Walkable communities locate a mix of uses, such as homes, shops, and schools, close to each other. They provide sidewalks, crosswalks, and bike lanes that create safe passage for walkers and bikers, and they offer convenient, well-designed parking that encourages people to park and walk to their destination. Walkable communities offer more transportation choices, higher levels of social interaction, greater opportunities for physical activity, and reduced emissions from automobile travel.

For waterfront communities, improving the connection between pedestrians and the water can increase interest in walking and biking and help to decrease the pressures of seasonal traffic. The pedestrian connection to the water can be improved physically, with better street, path, and trail connections, and with access points to the water that are open to the public. The connection also can be approached visually, by designing the built environment in ways that preserve the view of the water and encourage residents and visitors to access the waterfront on foot. Orienting the built environment to the water can improve public access to it and encourage a better appreciation of this precious asset.

Ensuring physical access from streets or sidewalks to the waterfront can be a challenge, however. Many coastal and waterfront communities have a shortage of public-access facilities, such as public walkways and boat launches. In some communities, traditional public access sites have been converted to private uses. It can be difficult to acquire new access points because of the prohibitive costs of both land and maintenance.

The public also may be unsure of how to access the water if adequate signage is not provided. Additional challenges arise when people headed to the water to swim, stroll, fish, or surf inadvertently degrade sensitive natural areas near the water. Pedestrian access to the water must not only be connected to the built environment, but also accommodated in ways that protect natural resources.

A number of tools can help. Communities can inventory where the public access points are, flag the gaps, and put all this information on a map. Then, with maps and inventories at hand, visioning exercises can help residents and visitors articulate how they expect to access the water and what they expect to do there. In Grand Marais, Minnesota, the city used a community visioning process to define redevelopment options for a derelict gas station located between the waterfront and downtown. The community decided to create a waterfront park on the site. Today, Harbor Park better connects downtown Grand Marais to its waterfront; visitors and residents walking its paths enjoy unobstructed views of and access to Lake Superior. The park has become a community centerpiece, regularly hosting festivals and other community gatherings.[20]

Once a vision is developed, it should be incorporated into pedestrian master plans, mixed-use zoning, and capital improvement plans that codify and fund improved access. Localities then can provide incentives or adopt regulations guiding plans for water access in future development. Along the Amelia River waterfront area of Fernandina Beach, Florida, the city established a "floating" overlay district that allows property owners to double their density if they grant the city an easement to build a public boardwalk along
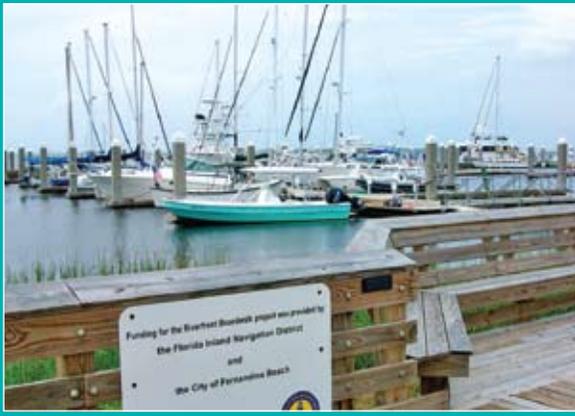
The City of Fernandina Beach, Florida, uses density incentives to encourage visual and physical access to the waterfront.
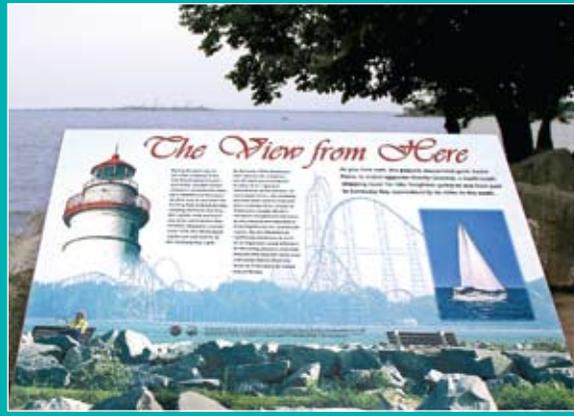


Informational signs encourage people to visit and learn about the waterfront.



Homes, stores, restaurants and the water all are within an easy walk of downtown Burlington, Vermont.

the riverfront, allow pedestrian access, and maintain a view corridor. The overlay district also promotes a mix of uses by requiring housing to be located above ground-floor commercial or office uses.[21]

Efforts to ensure access are complemented by tools that can make communities safer and more appealing for pedestrians. A "park once" strategy encourages development of centrally located parking (preferably away from the water) that allows workers and visitors to leave their cars and walk to their destinations. Proper "wayfinding" planning can encourage more activity on foot or bike by providing maps, good signage, and other guidance directing people to the waterfront and other amenities. Additionally, placing a public dock near a walkable waterfront makes it easy for visitors arriving by water, via a public ferry or private vessel, to access the community by foot (see Element 8 for additional information on water-based transportation). Sidewalk design standards that provide ample room for

walking (buffered from traffic by parked cars or trees and other vegetation) can encourage more pedestrian activity. Trees, planting strips, and rain gardens create more pleasant pedestrian environments and can be designed to manage stormwater runoff. Finally, routine evaluations of permits, zoning laws, street design guidelines, and other policies can help ensure that existing regulations and programs enhance the walking environment and support the community's desire to design and position buildings in ways that make the water easy to access.

A walkable community requires much more than a sidewalk, path, or boardwalk. In coastal and waterfront communities, it calls for a comprehensive approach to building and street design, parking, zoning, and water access that ensures that pedestrians are safe, welcome, and have a range of destinations—water- and land-based—to which they can walk.

## CASE STUDY

### Ogunquit, Maine

In Ogunquit, Maine, the Marginal Way is a public walkway along the Atlantic shore, located a block from Ogunquit's downtown. The Marginal Way is a remnant of a pre-colonial coastal trail, which a coastal property owner donated to the town in the 1920s. The town, working with several contiguous property owners, acquired easements in the 1940s to extend the trail another 2,000 feet. Signs direct pedestrians from downtown to the entrance of the Marginal Way, which extends along the coastline for nearly two miles, including access paths, ending at Perkins Cove, a small working harbor near Ogonquit with a variety of shops and restaurants. The town holds full title to most of the land area of the trail and is responsible for its management

| Key Action Options | Policies, Tools, and Techniques for Implementation |
|---|---|
| *Mix land uses and design buildings to foster pedestrian activity and visual access to the water* | • *Adopt policies and codes that allow for a mix of uses compatible with waterfront development*<br>• *Adopt building codes that establish appropriate building heights around water resources and ensure visibility of special points of interest or viewing areas*<br>• *Connect buildings, streets, and paths to the waterfront*<br>• *Create central parking facilities to serve as park-once locations within walking or shuttling distance of waterfronts or central business districts* |
| *Foster a safe and supportive infrastructure for walking, biking, and other non-motorized means of travel* | • *Establish a pedestrian master plan that supports investment in good sidewalks, narrow streets, crosswalks, bike lanes, on-street parking, street art, and appropriately scaled green infrastructure*<br>• *Ensure pedestrian safety through street design standards and speed control measures*<br>• *Provide maps for pedestrians, bikers, and "blue trail" users (with tours and points of interest), informational signage, and guides to boating storage facilities, racks, and access points*<br>• *Provide well-maintained pedestrian walkways and bicycle paths*<br>• *Assess and consider impacts from expected sea level rise or lower lake levels* |
| *Expand and manage physical access to the water* | • *Inventory existing access sites compared to current and projected demand for access*<br>• *Prioritize access needs by identifying what types of access are needed and their most appropriate location*<br>• *Identify potential funding sources that will support the acquisition of properties for new access and the construction of any physical infrastructure needed*<br>• *Provide attractive and safe pathways between parking areas, public transportation, and waterfronts, ensuring that the connections are well-lit with adequate signage* |

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SMART GROWTH

and maintenance. For an Ogonquit resident or tourist, the Marginal Way complements an already walkable community. The vibrant, mixed-use downtown has wide sidewalks and shade trees, and visitors are encouraged to park in a municipal lot next to the downtown and explore the area on foot or via the Ogunquit Trolley, which provides service along the coast during the summer months.[22, 23]

# ELEMENT

**Foster distinctive, attractive communities with a strong sense of place that capitalizes on the waterfront's heritage**

5

"
**Coastal and waterfront communities can capitalize on their location and strengthen their sense of place by visually and physically connecting their streets, buildings, and public spaces with the water.**
"

Even simple design elements, like these gas lamps in Charleston, South Carolina, can add to a community's sense of character.



Creating fun, interactive public spaces with a connection to the waterfront can bring new vibrancy to a community.

Vibrant streets and attractive public spaces are hallmarks of healthy communities. Distinctive features such as tree-lined boulevards, historic buildings, or rows of shops and cafes make neighborhoods and downtown centers places where people want to be. Old buildings lend themselves to reuse as housing, businesses, and cultural centers; new building designs can blend with the character of surrounding structures and the environment. Smart growth approaches reflect the varied interests of community residents, creating a more cohesive community fabric that helps maintain economic vitality.

Many of the techniques that inland communities use to ensure that new growth and development enhance the character of a place also apply to communities along the water. Waterfront and coastal communities are defined by the sights, sounds, and smells of the water; the activity on the docks or wharves; and the opportunity to boat, swim, and fish nearby. While historically these communities took advantage of their location for industries such as shipbuilding, fish processing, and warehousing, over time many of the buildings and docks that supported those activities have fallen into disrepair. But communities can adapt neglected historic buildings and structures for reuse. Protected and restored lighthouses, harbors, and public piers can affirm historical connections and draw both visitors and residents. These features not only represent physical assets that illustrate the community's sense of place, but they can also be the center point for redevelopment that strengthens the local economy.

Regional and global economic changes may mean that many small-scale fishing, shipping, and other traditional ventures are now less viable. Efforts to maintain a working waterfront often require thoughtful intervention and land use management by local government. Many communities envision a working waterfront as part of their revitalization efforts and adopt policies to support it. For example, Newburyport, Massachusetts, used a number of strategies to create a vibrant waterfront. The city initiated an urban renewal project in the 1970s that documented historic buildings and eventually led to the establishment of a historic district.[24] Newburyport protected water-dependent uses, including boatyards and marinas, from encroachment, created a mixed-use district along the Merrimack River, and adopted design and zoning guidelines for new development to protect the town's historic character. The city also developed a strategy for streets and public paths to protect views and access to the water and extended a harbor walk connecting neighborhoods to the downtown and its waterfront parks.[25] The waterfront is now a central gathering place for residents and tourists alike and is in easy walking distance of restaurants, art galleries, and other amenities.

Coastal and waterfront communities can capitalize on their location and strengthen their sense of place by visually and physically connecting (or reconnecting) their streets, buildings, and public spaces with the water. The waterfront community of St. Andrews, Florida, used its traditional working waterfront and historic structures along the St. Andrews Bay as the focal point for community revitalization. Tourism and charter fishing flourished in St. Andrews until the 1970s, when the charter boats moved to neighboring beach communities, and the historic community fell into decline. Through a community-based visioning process, residents identified existing historic and cultural resources as a revitalization

Creative signage directs residents and visitors to local shops in St. Andrews, Florida.


Chattanooga, Tennessee's riverfront redevelopment reclaimed the city's link to the water.


Maritime heritage fosters a strong sense of place in New Orleans, Louisiana.

priority. The resulting redevelopment plan focused on strengthening these assets through targeted investments in the working waterfront and historic district, including a wayfinding signage program.[26]

Chattanooga, Tennessee, also recognized the opportunity that existed in its neglected waterfront along the Tennessee River and made it a centerpiece of its revitalization efforts. Faced with extensive air pollution and a weakening economy, Chattanooga initiated a public visioning process in 1984 and created a plan to turn the city around. The plan helped Chattanooga transform its riverfront into a focal point for residents and tourists through the addition of an aquarium, art museum, public art, picnic areas, natural greenways to protect creek corridors leading to the river, and pedestrian bridges to facilitate access. The result is evident not only in Chattanooga's reclaimed

relationship with the river, but also in the revitalization of the broader community that these waterfront efforts inspired.[27]

In new coastal or waterfront communities, pedestrian-scaled streets, well-designed buildings, and inviting public spaces can be connected with the water to create great places. In established communities, redevelopment efforts can incorporate buildings, docks, and other structures historically connected to the working waterfront, capitalizing on the rich heritage the waterfront provides.

## CASE STUDY

### Leland, Michigan

Leland, Michigan, turned the challenge of a declining commercial fishery into an economic opportunity by focusing revitalization efforts on its historic and natural resources fronting the Leland River and

Lake Michigan. Leland identified the fishing complex known as "Fishtown," with its weathered fishing shanties, smokehouses, and docks,[28] as a key element to preserve in maintaining the city's maritime heritage. Listed

on the National Register of Historic Places, the preserved and renovated structures of Fishtown now provide visitors with an opportunity to learn about the Great Lakes' maritime tradition and enjoy recreational
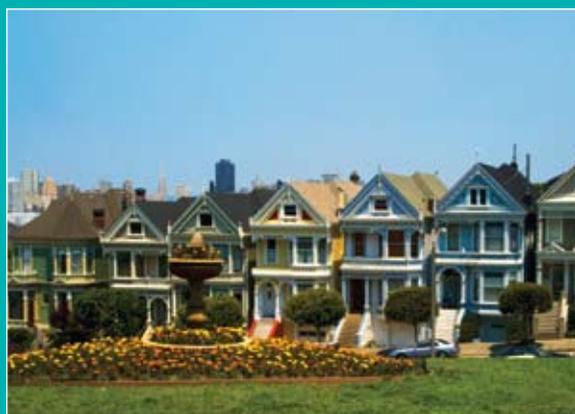
The distinctive Victorian-style houses around San Francisco, California's Alamo Square have become the backdrop for many popular postcards of the city.

The beautiful buildings in San Diego, California's Gaslamp Quarter create a welcoming vista for drivers and walkers alike.

| Key Action Options | Policies, Tools, and Techniques for Implementation |
|---|---|
| *Create an understanding of the community's assets* | • *Conduct a community asset inventory*<br>• *Write an ecological history of the community*<br>• *Incorporate community asset inventories and ecological history into visioning efforts* |
| *Create a community vision for the future* | • *Use visual preference surveys*<br>• *Conduct visioning exercises*<br>• *Incorporate ideas from citizen advisory committees*<br>• *Consider potential short- and long-term impacts of climate change* |
| *Incorporate the community vision into policies and codes for new development as well as redevelopment projects* | • *Adopt design guidelines*<br>• *Adopt form-based codes*<br>• *Require new development projects to incorporate public charrettes into the plan development process* |
| *Incorporate historic and cultural structures in development projects, including working waterfront features such as buildings, docks, and piers* | • *Implement historic preservation districts*<br>• *Implement tax incentives to protect historic resources*<br>• *Provide grants for reuse of historic structures*<br>• *Implement an economic development agenda that capitalizes on the community's waterfront heritage and natural assets* |

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SMART GROWTH

activities on Lake Michigan and Lake Leelanau.[29] Fishtown has helped Leland, with its walkable downtown and easy access to the water, capitalize on its heritage and history despite the decline of its traditional fisheries-based economy.[30]





Leland, MI

# ELEMENT

**Preserve open space, farmland, natural beauty, and the critical environmental areas that characterize and support coastal and waterfront communities**
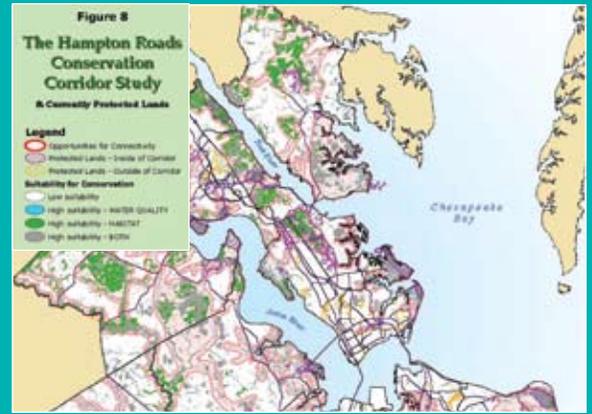
**6**

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**By preserving open space, farmland, natural beauty, and critical environmental areas, communities can maintain essential environmental services and improve community resilience.**

"

Both visitors and locals enjoy the beauty and abundant wildlife found in wetland areas.



Communities can protect important natural resources by integrating green infrastructure assessments into their comprehensive land use plans.

Natural and working lands play an essential role in the economic, environmental, and social well-being of communities. Natural areas and parks increase neighboring property values, attract businesses and residents, support tourism, offer opportunities for recreation, and provide scenic value. Farmlands provide food; working forests provide timber. Wetlands, forests, stream buffers, and other critical environmental areas provide many additional benefits, including water and air filtration, recharge of precious groundwater resources, protection of drinking water supplies, and habitat for plants, animals, and beneficial insects. Conserving these resources is important to the environmental health and well-being of any community as it grows or redevelops.

Coastal and waterfront communities depend on their working lands, waterscapes, and ecological systems. The dynamic natural processes that characterize the shifting boundary between the land and the water create beautiful landscapes that are essential to both local ecology and economy. Freshwater and tidal creeks, marshes, cliffs, dunes, estuaries, and beaches intertwine to support complex ecological systems that provide invaluable services. Wetlands provide critical habitat, mitigate flooding, and capture and retain sediments, helping to keep pollutants from reaching downstream waters. Estuaries provide essential nurseries for commercial and recreational fish species. And beach and dune systems protect the shoreline against the natural hazards of erosion, storms, and sea-level rise. Local economies fueled by such activities as sport and commercial fishing, recreation, and tourism, as well as retiree and artist communities, rely on the natural assets that support them.

Protecting the strength and health of waterfront and coastal communities' natural resources requires balancing the needs of the built environment with those of the natural one. Green infrastructure planning can help communities get this balance right. Through green infrastructure planning, a community or region can identify and prioritize natural areas that should be preserved or restored to protect long-term ecological health and build community resilience. The process begins with an assessment of an area's most important environmental assets, identifying the natural and working lands and water bodies that need to be protected or restored. Along the water, this process should include a community vulnerability assessment, which systematically identifies areas that are vulnerable to, or that can help buffer communities from, natural hazards. The result is a framework that defines which lands and water bodies need protection and which areas can best accommodate growth.

On the southern end of the Chesapeake Bay in Virginia, the Hampton Roads Planning District Commission illustrates the green infrastructure approach. The commission developed a green infrastructure plan that identifies and links riparian-based conservation corridors, defines a future land use map outlining no-development conservation areas, and identifies land purchases to protect high-priority sites. This multi-stakeholder effort balanced interests and achieved many benefits, including habitat protection, stormwater management, wetlands mitigation, comprehensive planning, and support for recreation and tourism.[31]

In Puget Sound, Washington, protecting natural areas can bring many benefits, including protecting fish stocks and encouraging appropriate recreation and tourism.



Protecting and restoring natural dunes also protects coastal property.



Wetlands provide communities with important enviromental services.

A variety of tools can be used to protect high-priority areas on land or in the water. On land, preservation and protection tools include the purchase or transfer of development rights, direct purchase of the land, and various types of conservation easements. For example, in 1990, San Juan County on Puget Sound, Washington, established a land bank to permanently protect areas with environmental, agricultural, and scenic value. Since its inception, the land bank has protected 4,300 acres using funds generated from a real estate tax, donations, and grants. The San Juan County Land Bank's work is guided by county ordinance and overseen by a citizen commission.[32]

Central to any planning process along the shore must be the recognition that shorelines are constantly changing systems. Erosion, flooding, storm surges, and sea-level change in response to tides, waves, and storms are all natural and familiar processes, as are Great Lake water level fluctuations, but when they clash with the built environment, they can be hazardous. Furthermore, these processes are likely to intensify under some climate change scenarios.[33] Smart shoreline development can mitigate the

damaging effects on the built environment caused by these changes by incorporating land use approaches that reduce the risks from coastal and waterfront hazards. For example, protecting, maintaining, and, where possible, restoring natural areas along the water can create buffers that protect development from environmental changes. Communities can use a variety of tools to implement this approach, including development setbacks (e.g., from the high tide line), conservation easements, and rolling easements, which shift automatically with natural changes in the shoreline. Capitalizing on the inherent resilience of these assets by properly protecting them can help protect people and property from the impacts of natural hazards and the additional challenges posed by a changing climate.

Coastal and waterfront communities depend on their natural and working lands and the water. By preserving open space, farmland, natural beauty, and critical environmental areas, communities can maintain essential environmental services and improve community resilience.

## CASE STUDY

### Brays Bayou, Houston, Texas

The National Oceanic and Atmospheric Administration's (NOAA) Coastal and Estuarine Land Conservation Program (CELCP) was established in 2002 to protect valuable coastal and estuarine lands. One of CELCP's projects is in Brays Bayou in Houston, Texas. Through direct acquisition, CELCP grant funds are helping to protect about five

acres of undeveloped floodplains along the bayou in a mixed-use neighborhood in East Houston. The city of Houston, in association with the Houston Parks Board, initiated this project in an effort to set aside land for public open space, restore and maintain water quality, reduce the potential for flood damage, and enhance wildlife habitat along the bayou.

Although CELCP funds are buying only a small number of acres, these lands will complement previously acquired parcels and be combined with several planned acquisitions along the stream corridor. By improving access to the bayou, including walking and biking trails as well as scenic, shaded spaces for picnics, this project protects open

| KEY ACTION OPTIONS | POLICIES, TOOLS, AND TECHNIQUES FOR IMPLEMENTATION |
|---|---|
| *Plan with nature, anticipating dynamic waterfront and coastal processes (e.g., storms, sea-level rise, lake level fall, erosion) and manage ecological systems to be adaptive to changes caused by human activity* | • *Conduct community vulnerability assessment to determine natural hazard risks; model future scenarios; include participatory approaches to understand risks perceived by the community*<br>• *Link community hazard mitigation plan to community comprehensive plan; incorporate into zoning, capital expenditure plans, and other local land use management tools*<br>• *Use green infrastructure assets (such as natural buffer zones) to accommodate projected risks from climate change*<br>• *Protect, restore, and enhance vulnerable shorelines through acquisition, rolling easements, living shorelines, buffers and setbacks, or site-level green infrastructure/LID stormwater management practices* |
| *Protect, maintain, and, where feasible, restore ecological systems, including submerged lands and shore habitat* | • *Use green infrastructure planning to identify community and regional environmental assets*<br>• *Designate marine or terrestrial management areas*<br>• *Use purchase of development rights, transfer of development rights, and land or marine conservation agreements to protect critical areas*<br>• *Use best management practices promoting on-site stormwater infiltration, native species, and living shorelines*<br>• *Protect or restore connectivity between natural areas where needed to support ecosystem function*<br>• *Define appropriate indicators to measure and monitor ecosystem function and health over time*<br>• *Produce report cards and illustrative maps, based on goals and community vision, to align science with management priorities and to convey results to the public* |
| *Preserve open space and natural lands for scenic resources and recreational opportunities* | • *Partner with community land trusts to protect high priority lands*<br>• *Designate protection of waterscapes or coastal viewsheds within zoning schemes*<br>• *Create nature preserves, hiking and blue trails*<br>• *Use targeted funding for open space and habitat preservation*<br>• *Zone waters for specific uses based on local circumstances and constraints* |

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space to reconnect a historically underserved urban community with the water. Restoration efforts undertaken by local volunteers and school groups are not only restoring marshland vegetation and wildlife habitat, but are also teaching the participants about the value of functioning wetlands. By keeping the land undeveloped and permeable to capture runoff from storms, this project will help reduce the potential for flood damage in an area that, since its early history, has had significant flooding problems. The project is also providing important wildlife habitat and a welcome community amenity that will strengthen residents' connection to the bayou.



Houston, TX

# ELEMENT

## Strengthen and direct development toward existing communities and encourage waterfront revitalization

**"**

**Waterfront revitalization can enhance historic, cultural, and scenic resources, supporting community efforts to maintain a strong sense of place while protecting the water and other natural resources.**

**"**

The site of a former brownfield, Seattle, Washington's Gas Works Park was cleaned up and reused as a waterfront park.



The Cuyahoga River in Cleveland, Ohio, is the site of continuing revitalization efforts, including mixed-use development and plans for a city park.

Infill development in existing communities, where roads, utilities, and transportation connections are already in place, is a preferred growth strategy because of the many environmental and economic benefits it provides. When communities convert underused infill sites, such as parking lots or vacant properties, into vibrant mixed-use developments, they strengthen their local tax base, concentrate growth, and reduce pressure to convert undeveloped land, yielding significant air and water quality benefits. Redevelopment of brownfields—sites where reuse is complicated by real or perceived contamination—removes environmental hazards from communities and provides new investment opportunities in areas already well served by infrastructure. New development and investment in these infill locations can re-energize lagging commercial corridors, providing new stimulus to preserve traditional uses and promote recreational opportunities that strengthen the local economy.

In many coastal and waterfront areas, properties at the water's edge are prime redevelopment targets, since they are in or near the historic center of the community, are well connected to land- and water-based modes of transportation, and are close to jobs, services, and tourist sites. Waterfront revitalization can enhance historic, cultural, and scenic resources, supporting community efforts to maintain a strong sense of place while protecting the water and other natural resources.

However, redevelopment of waterfront properties can pose challenges as well as opportunities. Historic buildings are distinctive, potentially

profitable opportunities for reuse. But to encourage their renovation, communities may have to adopt "rehab" codes to offset the unintended barriers to redevelopment that standard building codes for new construction may contain. Brownfield revitalization efforts along the water also may be complicated because of the presence of protected, threatened, and endangered species and the possibility of contaminant runoff. Furthermore, the redevelopment of buildings to support non-water-dependent uses in areas traditionally dominated by water-dependent uses can result in displacement and gentrification (see Element 1 for further discussion of mixing uses). Finally, all coastal and waterfront communities need to consider their vulnerability to natural hazards such as storms and flooding, and, for those on the coast, the risks from sea level rise, so that revitalizing the waterfront does not make the community more vulnerable to natural disasters.

Nevertheless, infill and redevelopment efforts at the water's edge offer great potential for underscoring the connections between a community's culture, built environment, and natural resources. Through a robust planning process, stakeholders representing varied interests and organizations can unite in the common goal of revitalizing the waterfront in ways that protect the built and natural environments. For example, the city of Glen Cove, New York, located on Long Island Sound, used a community-based waterfront revitalization planning process to transform 214 acres of brownfields to mixed-use development along the north shore of Long Island. The city brought together federal, state, and local partners to leverage support for its waterfront revitalization. The city then

Waterfront revitalization plans can provide guidance for redevelopment, such as in Oswego, New York, where the community has rehabilitated and reused historic buildings.

Compact, historic mixed-use development patterns provide a strong sense of place in Provincetown, Massachusetts.

developed and implemented the Glen Cove Creek Waterfront Revitalization Plan in partnership with NOAA and the New York State Coastal Management Program. The plan and resulting zoning changes provided a road map for the community's vision and was a basis for building stakeholder support and developing partnerships for implementation. Because of this work, Glen Cove has leveraged over $40 million from public and private sources to support its waterfront revitalization initiative.[34]

In addition to creating rehab codes and pursuing brownfields redevelopment, communities can use other tools to target development to strengthen existing areas. Historic preservation districts, tax benefits, and incentives can support retrofitting the historic waterfront for new uses while protecting important structures and facades. Also, state or local "fix it first" policies can give priority for scarce public infrastructure investment dollars to existing communities, rather than expand services to undeveloped areas. States such as Massachusetts,

New Jersey, and Maryland—all of which have many waterfront communities—have implemented "fix it first" policies to attend to the needs of existing communities. In addition, concurrency policies can ensure that new development supports itself—in the form of roads, utilities, and schools needed to support new growth—thereby conserving public resources for repair and upgrading in already developed areas.

Communities must carefully consider the economic and environmental context before determining the best location for growth, development, and redevelopment. Along the water, this has always included factors such as sensitive natural areas, storms, and flooding. Communities facing the possibility of increased vulnerability from climate change-related impacts, such as increased flooding and sea level rise, may need to consider whether infill or redevelopment is appropriate. In appropriate locations, these development strategies can yield important economic, environmental, and community benefits.

## CASE STUDY

## Providence, Rhode Island's Downcity Providence and Waterplace Park

For much of the past two centuries, the downtown and Old Harbor of Providence, Rhode Island, functioned as the city's industrial and commercial center. Now often referred to as "Downcity," the area declined beginning in the 1950s, leading to the departure of water-related industries and the eventual burial of the Providence River for urban renewal purposes. In

the early 1990s, when many of the Downcity buildings were vacant or underused, Providence developed a revitalization strategy to create a "round-the-clock" neighborhood and destination in the core of the city and along the Providence River. The Downcity Master Plan and Implementation Plan called for the city to focus arts and entertainment uses in the downtown; create personal

tax exemptions for artists, writers, painters, and composers to move to the area; and implement tax incentives for developers to create apartments and lofts in underused properties. Providence also reformed its zoning code to allow residential uses in commercial buildings. In combination with tax credits for restoring historic buildings, this led to the rehabilitation and reuse of many
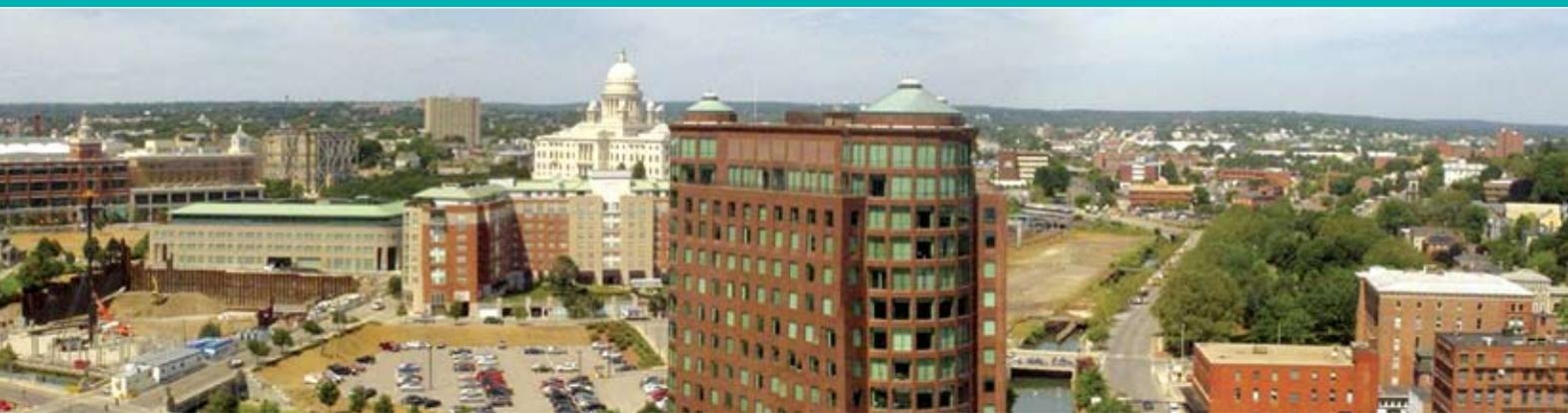
Revitalization of Downcity, including Waterplace Park and Riverwalk, has signaled the rebirth of downtown Providence, Rhode Island.

| KEY ACTION OPTIONS | POLICIES, TOOLS, AND TECHNIQUES FOR IMPLEMENTATION |
|---|---|
| *Promote community-based waterfront revitalization efforts* | • *Conduct community vulnerability assessments to ensure redevelopment is directed to appropriate areas*<br>• *Create waterfront master plans*<br>• *Use special area management plans*<br>• *Use harbor management plans*<br>• *Employ tax increment financing*<br>• *Create business improvement districts* |
| *Promote infill development by preserving, upgrading, and reusing existing properties* | • *Fix current infrastructure (fix it first policies)*<br>• *Employ development incentives such as expedited permitting processes in areas with existing infrastructure*<br>• *Create concurrency policies for new development* |
| *Retrofit historic waterfront for new uses* | • *Establish or promote historic preservation districts with associated incentives such as tax credits or easements*<br>• *Establish rehab codes for renovation of historic waterfront (or other area) buildings* |
| *Clean up and reuse brownfields* | • *Use state and local brownfield assessment and cleanup programs* |

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historic structures. Downcity is now connected with Waterplace Park and the Riverwalk, public spaces on the river that draw hundreds of thousands of visitors annually. These places were made possible in part by uncovering the Providence River, which once again flows through the city and is the focal point for Waterplace Park and the Capital Center area. Downcity and the area made up of Waterplace Park, Riverwalk, and the Capital Center have seen more than $200 million in private investment, including over 40 new ground-level retail, entertainment, and restaurant establishments. While the nature of waterfront activities has changed, the area is again a thriving downtown with a variety of entertainment, shopping, cultural, and living opportunities.[35]



Providence, RI
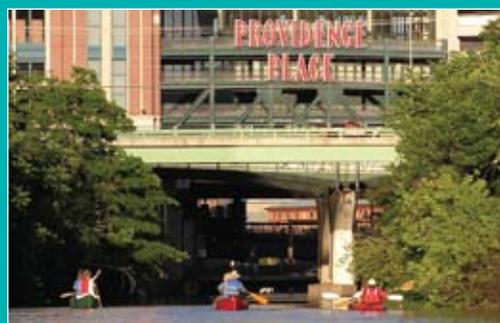
# ELEMENT

## Provide a variety of land- and water-based transportation options

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**All communities wrestle with traffic congestion; in waterfront communities, this congestion can be exacerbated by local topography, bridges, surges in seasonal visitors and part-year residents, and the hub-and-spoke nature of marine-based freight movement.**

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Light rail helps make it easier to get around San Diego, California.



Bike racks on the Lake Michigan waterfront encourage alternative transportation in Traverse City, Michigan.

Giving people more options for getting around meets many community goals. When people find it easy and safe to walk, bike, or take transit, they no longer have to rely exclusively on cars to get to shops, work, and school, reducing air pollution and traffic congestion. Walking and biking also help people include physical activity in their daily routines, give more freedom to those unable or unwilling to drive, and can reduce household transportation costs.

While waterfront and coastal communities share many of the transportation-related concerns faced by inland communities, their proximity to water creates distinct transportation challenges as well as opportunities. All communities wrestle with traffic congestion; in waterfront communities, this congestion can be exacerbated by local topography,[36] bridges, surges in seasonal visitors and part-year residents, and the hub-and-spoke nature of marine-based freight movement. Parking can be a challenge in any vibrant economic center; seasonal and weekend waterfront visitors or part-year residents compound that challenge.

Coastal and waterfront communities, though, can offer water-based transportation options, such as ferries and water taxis, that are unavailable to their landlocked counterparts. When combined with higher density, mixed-use, transit-oriented development on the waterfront, water-based transportation becomes more attractive to both tourists and commuters. The Washington State ferry system, the largest in the country, serves more than 26 million people per year with 20 terminals throughout Puget Sound. The ferry system has reduced automobile use in the region, in part because of developments like the Bremerton Harborside project.[37] This high-density, mixed-use redevelopment connects the ferry terminal to homes, stores, and other places and makes better use of

valuable waterfront land than its previous incarnation: parking lots for ferry riders.[38] (See Element 9 for more information about Bremerton.) Elsewhere, Baltimore, Maryland's water taxi system, the oldest in the country, benefits from its connections to the redeveloped Inner Harbor, which attracts tourists and houses permanent residents and workers.[39] The Baltimore water taxi service provides access to more than 30 attractions and neighborhoods for tourists (and, increasingly, commuters) across the city. Smaller watercraft can be viable transportation alternatives, too. Communities are adding blue trails for recreational and commuter kayaking. In Seattle, for example, the Lakes-to-Locks Water Trail connects inland lakes, rivers, waterways, and the ship canal with the shores of Elliot Bay and Puget Sound.[40] Baltimore's Canton Kayak Club maintains four docks with boats, paddles, and life vests around the harbor, and some club members use the boats to paddle to work.[41]

When appropriately connected, water-based transportation options also can strengthen the value and utility of ground transit (such as buses, subways, commuter trains, and streetcars). Boston's Massachusetts Bay Transportation Authority operates commuter boats and ferries with many destinations and with connections to subway lines, commuter rail lines, and bus routes, making transfers and trip planning easier for residents and visitors.

Other tools to improve transportation options apply to both waterfront and inland settings. These tools include variable pricing that charges higher fees during peak demand, and convenient park-once or shared parking facilities with good shuttle or walking connections to desired destinations (see Element 4 for more information on walkable communities). Locating parking facilities away from the water's edge can free

Kayaking provides great recreational opportunities, as illustrated in this photo of Michigan's Detroit River. In some places, communities are also exploring kayaking as a commuting option.



In Baltimore, water taxis provide viable transportation between key sites throughout the harbor.



In Port Clinton, Ohio, ferries provide access to islands in Lake Erie.

valuable waterfront land for development or water access. Other system-wide investments in reliable public transit (including buses or streetcars), improved connectivity among road networks, and better infrastructure for biking and walking can help make alternatives to driving easier and more appealing.

Besides the movement of people, the movement of goods is an important transportation issue for waterfront and coastal communities. Deep draft ports accommodate oceangoing vessels, which carry more than 99 percent of U.S. overseas trade by weight and 64 percent by value.[42] The connections between water and surface transportation—specifically, port connections to rail, air, road, and pipeline—are critical to moving goods efficiently and cost-effectively. These connections also affect the environment and quality of life in adjacent communities. Many of these communities have historically suffered a disproportionate share of adverse environmental impacts and are seeking alternatives to moving freight from port to highway to reduce the truck traffic going through their neighborhoods.[43] The 20-mile, $2.4 billion Alameda Corridor project in Los Angeles is one of the most visible efforts to shift the movement of goods off roads and onto rails to relieve traffic congestion, improve air quality, and improve the quality of life for nearby neighborhoods. Transportation options that reduce congestion can help ensure the vital movement of goods while protecting the quality of life in adjacent communities.

Providing a wide range of land- and water-based transportation options can help communities by the water create a welcoming, pedestrian-friendly environment that also accommodates the efficient movement of goods necessary to waterfront commerce.

## CASE STUDY

### The Staten Island Ferry, New York

Every year, the Staten Island Ferry gives more than 19 million passengers—including commuters, residents, and tourists—a ride across New York Harbor between Staten Island and lower Manhattan. The ferry runs 24 hours a day, every day of the year. Operated by New York City as a municipal service since 1905, the ferry serves 65,000 passengers on a typical weekday and is open to pedestrians only. Rail and bus service is available at both ferry terminals; the Staten Island Terminal is served by multiple buses and the Staten Island Railway, while the Whitehall Terminal in Manhattan is within walking distance of the city subway and three bus lines.[44] According to New York City's Independent Budget Office, about 40,000 weekday trips are made on

The effective linkage of marine shipping with land-based transportation can be critical to water-based economies such as those along the Great Lakes.

| Key Action Options | Policies, Tools, and Techniques for Implementation |
|---|---|
| *Enhance water-based public transportation and link it to pedestrian and land-based transit systems* | • *Encourage water-based public transportation options, particularly those that accommodate walk-on passengers (e.g., ferries and water taxis)*<br>• *Coordinate water-based public transportation with land-based systems and schedules (e.g., rail, bus)*<br>• *Apply transit-oriented development principles to water taxi or ferry terminal areas, using high-density, mixed-use projects to attract water transit riders* |
| *Ensure that transportation options consider the movement of goods, as well as people* | • *Ensure efficiency of intermodal connections (e.g., port to truck, rail, air)*<br>• *Coordinate between marine transportation and port plans, local land use plans, and land transportation and infrastructure plans* |
| *Plan for seasonal transportation needs* | • *Use variable pricing policies for parking or tolls*<br>• *Consider a park-once strategy for cars and boats; complement with shuttle services and improved pedestrian access*<br>• *Locate parking structures and sites away from water's edge*<br>• *Increase shuttle service during seasonal peaks* |

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SMART GROWTH

the ferry by Staten Island residents, equivalent to roughly 20,000 two-way commuter trips a day across the two bridge and tunnel routes into lower Manhattan.[45] Given that a typical bridge or tunnel lane can accommodate about 6,000 vehicles during peak rush hours, the ferry has helped to reduce congestion, as well as the need for investment in additional lane capacity.
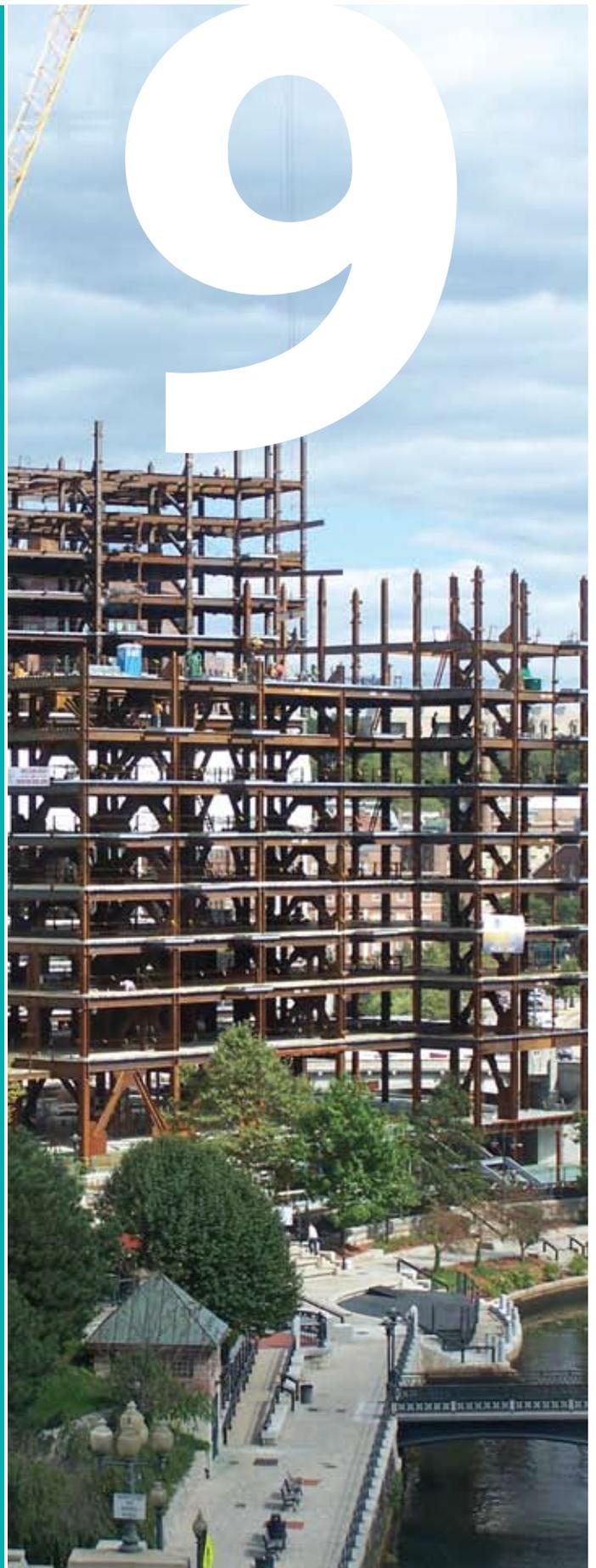


New York, NY

# ELEMENT

## Make development decisions predictable, fair, and cost-effective through consistent policies and coordinated permitting processes

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**In waterfront and coastal communities, strong and often competing demands between development, recreational uses, and protection of the environment must be balanced.**

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The Digital Coast Legislative Atlas provides a searchable database of coastal and ocean legislation, spatially illustrating the boundaries of laws, jurisdictions, and policies (*www.csc.noaa. gov/digitalcoast/tools/legatlas/*).



Bringing a community together to establish a vision for growth is an important part of creating a predictable and fair development process.

In most communities across the country, the private sector is responsible for the overwhelming majority of new development. New development has many costs. Most of them—land, materials, and labor, for instance—can be accurately identified and accounted for by a developer. However, the costs for permitting, zoning variances, site reviews, and compliance with applicable regulations are often less clear and can be compounded by the time each process takes. Because compact, mixed-use projects diverge from conventional plans for single-use projects, they are more likely to need extra reviews in communities that do not have smart growth-supportive zoning codes. For development projects to succeed, they must be buildable within a reasonable timeframe, with a likely profit commensurate with their risk. The public sector can support environmentally responsible development by reducing barriers to smart growth, ensuring that the development process for all projects is efficient, fair, and transparent.

In waterfront and coastal communities, strong and often competing demands between development, recreational uses, and protection of the environment must be balanced. The uncertainty in development can be magnified by the extra layers of local, state, and federal regulations that apply along the water. Often, planning and permitting agencies have different roles and responsibilities that must be reconciled. By creating an easily understood, predictable development process, waterfront and coastal communities can create a climate that is more likely to produce projects that meet multiple community goals. This can be achieved by effectively coordinating across regulatory agencies, providing non-regulatory incentives, and allowing flexibility in local development policies.

In any community, a first step toward greater fairness and predictability is to establish a vision for growth. Visioning is often accomplished through charrettes and other stakeholder involvement processes (see Element 10 for more detail on these processes). Some communities have followed up on visioning processes with "policy audit" tools that help identify inconsistencies between their established vision for growth and existing policies, codes, and regulations. Others have directly approached developers, public officials, and interested citizens to simply ask what they each believe are the barriers to better development. Whatever the method used, once these obstacles are identified, communities can work with the appropriate regulatory agencies to adopt a policy framework that makes it easier for developers to implement the community's vision.

Such a policy framework may include centralized, easily accessible information for the planning, review, and permitting processes, making them more transparent and helping to hold responsible regulatory agencies accountable. For example, Louisiana's on-line Coastal Use Permit system allows applicants to file an application and revisions, track the application's progress through the entire permit process, and receive expedited authorizations.[46] Readily available information like this on the status of pending applications makes the process more predictable. Other jurisdictions coordinate the review and approval of plans and permits. Florida, for example, consolidates applications for coastal construction permits, environmental resource permits, wetland resource (dredge and fill) permits, and submerged lands authorizations for a single project into a "joint coastal permit" issued by a single agency. This system minimizes potential conflicts
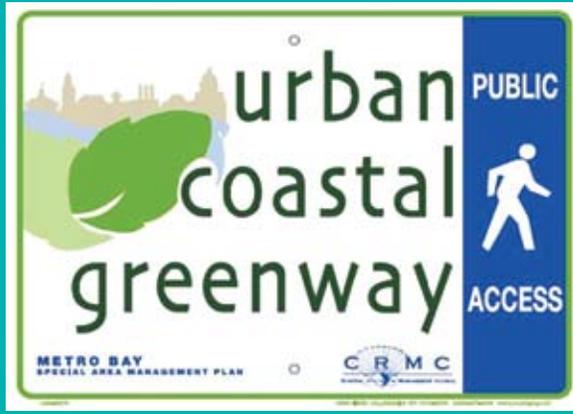
The Rhode Island Coastal Resources Management Council's Metro Bay Special Area Management Plan is enhancing public access and recreational opportunities along the shorelines of the Providence, Rhode Island, metro region.

among permitting agencies and helps ensure efficient reviews.[47]

A tool specifically applicable to the coastal development process is the Special Area Management Plan (SAMP). Created by the Coastal Zone Management Act, these plans provide a formal mechanism for cross-jurisdictional coordination of land-use policies in coastal areas. The Rhode Island Metro Bay Region SAMP, which encompasses 24 miles of shoreline at the head of Narragansett Bay, was developed by the Rhode Island Coastal Resources Management Council in collaboration with the four metropolitan communities of Cranston, East Providence, Providence, and Pawtucket. Covering most of the waterfront in these four cities, the Metro Bay Region SAMP was developed to improve the working waterfront, provide public access to the water and along the shoreline, and attract new development with a more predictable and efficient permitting process. Rhode Island state agencies and municipalities are required by state law to hold joint permit review meetings for large-scale projects. The SAMP process ensures a coordinated review of coastal projects and facilitates a more effective and efficient local and state permitting process.[48]

Design guidelines can also help streamline the process. Communities can create guidelines that show developers and builders the form of buildings, streetscapes, setbacks, and elevations that are compatible with local codes and ordinances. Guidelines can include specific provisions reflecting the community's distinctive natural setting and heritage. The city of Norfolk, Virginia, on the James River and Chesapeake Bay, commissioned a pattern book that identifies various styles found in different neighborhoods and illustrates architectural components, such as the design of windows, doors, and porches, that have the development character the community wants.[49] This gives developers a clear guide to what designs are acceptable.

In coastal and waterfront communities, the complex local, state, and federal regulatory framework may make it more challenging to create a predictable development climate. However, these communities have access to a wide variety of tools to make it easier for the private sector to build projects that meet multiple community goals.

SMART GROWTH FOR COASTAL AND WATERFRONT COMMUNITIES

CASE STUDY

## Bremerton, Washington

The city of Bremerton, Washington, recognized that the revitalization of its waterfront along Puget Sound and its downtown next to the waterfront were central to the community's future. Revitalization of the waterfront was particularly challenging, since the area included the U.S. Navy's Bangor

shipyard and submarine base and the state-controlled Seattle-Bremerton Ferry terminal. Vacant and underused sites that were ideal places for new development were subject to a myriad of development regulations, as well as Homeland Security regulations (given the proximity to the shipyard and submarine base).

To address these challenges, Bremerton implemented a Shoreline Master Program, a waterfront redevelopment policy tool available to localities through Washington's Shoreline Management Act and the Bremerton Community Renewal Program, and set out to create a redevelopment climate that

"A Pattern Book for Norfolk Neighborhoods" features architectural components and styles that reflect the community's design preferences.



Community members need forums where they can discuss desired outcomes for future growth and development.

| KEY ACTION OPTIONS | POLICIES, TOOLS, AND TECHNIQUES FOR IMPLEMENTATION |
|---|---|
| *Come to consensus on a vision for future growth* | • *Employ design charrettes, comprehensive plans, and other stakeholder visioning processes* |
| *Develop processes that make decisions predictable and faster while meeting community development objectives and protecting natural and cultural resources* | • *Create consistent cross-agency review criteria and processes*<br>• *Use one-stop shops for interagency review*<br>• *Develop pattern books and design guidelines that include form-based codes* |
| *Make development processes transparent, fair, and inclusive* | • *Create development policies and regulations that are easy to understand and apply*<br>• *Use published project review timelines*<br>• *Build on-line databases showing project status*<br>• *Use a variety of stakeholder involvement processes, including community meetings, design charrettes, and on-line discussion forums* |
| *Provide centralized, easily accessible information* | • *Produce publications and websites that outline processes*<br>• *Create on-line databases*<br>• *Use one-stop shops for information on the permitting process* |

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SMART GROWTH

would attract private developers to build projects the city needed and the market could support. Public investments in the ferry terminal, a conference center, and a waterfront park attracted private developers who invested in office and residential properties. Since 2000, over $500 million worth of construction has occurred in the Harborside District. Bremerton has capitalized on this success by adopting a new downtown plan, complete with design guidelines, mixed-use zoning, and streetscape standards, that has streamlined the development process.[50]



Bremerton, WA

# ELEMENT 10

**Encourage community and stakeholder collaboration in development decisions, ensuring that public interests in and rights of access to the waterfront and coastal waters are upheld**

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**An inclusive planning process is critical for waterfront and coastal communities because of the complex regulatory environment, the diversity of stakeholders, the demand for public access to the water, and the competing interests for use of waterfront resources.**

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Public access to the water is critical to coastal and waterfront communities.



Maps can help people better understand a community's vulnerability to hazards.

One of smart growth's signature characteristics is a meaningful public involvement process that ensures that the needs and concerns of all affected stakeholders are identified and addressed. Successful development requires inclusive planning processes that give community members and other stakeholders a clear voice in the development process. Growth can create great places to live, work, and play—if it responds to the community's vision of how and where it wants to grow.

An inclusive planning process is critical for waterfront and coastal communities because of the complex regulatory environment, the diversity of stakeholders, the demand for public access to the water, and the competing interests for use of waterfront resources. What happens on and near the water can enhance property values, support businesses, enhance community resilience to natural hazards, and greatly affect a community's overall quality of life.

The tools for effective involvement are similar for inland and waterfront communities. The goal is to fairly identify and respond to all legitimate interests by providing clear and convenient opportunities for substantive involvement at critical stages in the development process. Involvement should begin well before a development plan is on the table, the scope of participants' decision-making power should be clear at the outset, and all involved should be periodically updated on how their input is being used.

One of the primary interests of people living and working near the water can be access to the water. However, the legal framework regulating access is complex. In most waterfront settings, historic public use can establish an easement allowing public access to the water across private land. In addition, where navigable or tidal waters are involved, the public trust doctrine requires states to protect public use of and access to the water, as well as the land beneath it. Each state applies this common law principle according to its own legal traditions. In most states, fishing and boating, including recreational use of the water, must be accommodated, and access cannot be denied simply because adjoining lands are privately held. But public access rights vary across jurisdictions.[51] For example, in a handful of states, shorefront property owners also own the adjacent intertidal zone. The quality of life in coastal and waterfront communities depends in part on finding ways to constructively balance these rights of public access and private ownership. Well-designed, collaborative stakeholder involvement processes can help reach this objective.

Identifying who to involve requires understanding who has an interest in, or will be affected by, proposed development. Near the water, there can be many stakeholders, such as recreational users, commercial fishers, developers, waterfront business owners, and permanent and seasonal residents. On the coast, a wide range of federal, state, and regional government entities also must be engaged, since they are responsible for community health and safety and for protecting both the environmental quality of coastal ecosystems and the public's right of access to them.

The stakeholder involvement process can help create a vision for future development. In 2004, the communities of Northwest Indiana began a regional
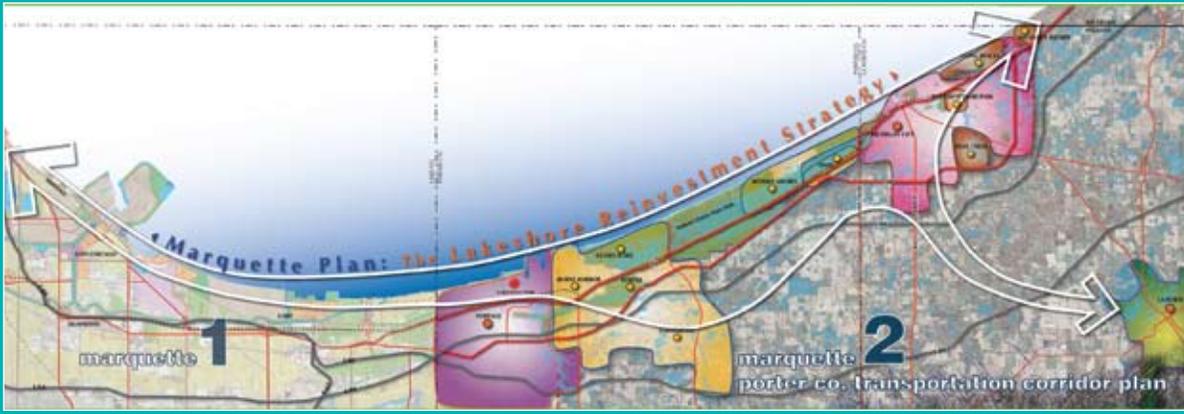
The Marquette Plan provides a regional vision for 45 miles of shoreline along Lake Michigan in Northwest Indiana.

Community members and planners worked together to develop community redevelopment maps for Pass Christian, Mississippi.

plan for their 45 miles of shoreline along Lake Michigan. The Marquette Plan unifies the area by leveraging the collective strengths of these lakeshore communities. Through a public involvement process that included multiple community forums and stakeholder interviews, five communities agreed on three guiding principles: increased public access to the shoreline; creation of a multi-purpose trail connecting lakefront communities; and minimum 200-foot setbacks from the lakefront for all new development. To date, one new development project has been completed, five are funded, and 16 are in the planning process.[52]

Engaging all affected stakeholders is especially critical in the wake of natural disasters. After Hurricane Katrina in 2005, Mississippi Governor Haley Barbour created the Governor's Commission on Recovery, Rebuilding and Renewal to develop a strategy for rebuilding communities damaged by the hurricane. The commission hosted design forums in 11 communities. In the Gulf of Mexico community of Pass Christian, the process included walking tours through the devastated area and a charrette involving community residents and officials. The result was a plan with four goals: recover economic sustainability; support and unite the community by restoring the civic realm; support and unite the diverse interests in the community; and rebuild city-wide. The rebuilding plan incorporates core smart growth approaches, including mixed use, walkability, a variety of housing options, and codes that support them.[53]

Involving stakeholders from the outset of a waterfront development project creates the basis for a shared vision of the future. The result can be a development plan that uses the land efficiently and wisely, upholds public rights of access, and protects the community's interest in a precious natural resource.

## CASE STUDY

### Vienna, Maryland

Vienna is a small town on the Nanticoke River, a tributary of the Chesapeake Bay. One of the oldest settlements in Maryland, with an original plan dating back to 1706, this town on Maryland's Eastern Shore retains a strong fishing and agricultural base.[54] In response to growth pressures in the early 2000's and to prepare for a scheduled update of the town's comprehensive plan, Vienna asked The Conservation Fund, a national nonprofit group, to help develop a new vision for the community. The town council, the mayor, and experts from The Conservation Fund worked with the community to assess the town's natural resources, economic opportunities, land use trends, and development potential. The tools they used included a public opinion survey that involved about half the town's adult population, in-depth community interviews

Community meetings provide an opportunity to explore shared goals, issues, and concerns.

Rural Vienna, Maryland, is working to protect its historical ties to the river and the surrounding rural landscape.

| Key Action Options | Policies, Tools, and Techniques for Implementation |
|---|---|
| *Develop an inclusionary process to maximize participation and results* | • *Conduct a stakeholder analysis*<br>• *Schedule meetings to accommodate all stakeholders (including seasonal residents)*<br>• *Conduct individual and small group interviews*<br>• *Administer community surveys through the mail* |
| *Develop a common understanding among the diverse stakeholders* | • *Engage all stakeholders to set goals*<br>• *Conduct walkability tours and audits*<br>• *Administer visual preference surveys*<br>• *Hold community visioning exercises*<br>• *Perform policy audits to ensure that plans, codes, and regulations are consistent with community vision* |
| *Use appropriate and transparent meeting and communication techniques* | • *Use charrettes to resolve complex design issues*<br>• *Use trained meeting facilitators*<br>• *Employ a communication strategy to keep all interested constituencies updated and involved*<br>• *Use geographic information systems (GIS) to create maps depicting alternative development scenarios*<br>• *Analyze alternative development scenarios using visualization software* |
| *Collaborate with federal, state, and local authorities who have jurisdiction over the public trust and coastal natural resources* | • *Employ special area management planning*<br>• *Conduct joint coastal permit reviews*<br>• *Provide feedback when federal agencies solicit input for environmental impact statements* |

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SMART GROWTH

with individual residents, and community workshops. As a result, the town developed a plan that preserves Vienna's rural town character while still accommodating growth. Although the nationwide real estate downturn of 2008 gave the area some breathing room, residents and real estate experts expect development to return. When it does, the Vienna–Conservation Fund process can serve as a model for conservation and growth in the Chesapeake Bay watershed.

Vienna, MD

# Glossary

**Accessory dwelling unit:** An accessory dwelling unit (ADU) is a second residential unit that may be contained within an existing single-family home, garage, or carriage house. An ADU usually is required to be a complete housekeeping unit that can function independently, with separate access, kitchen, bedroom, and sanitary facilities. These units are sometimes also termed "granny flats," "mother-in-law" apartments, or elder cottages.[55]

**Blue trail, blueway:** Blue trails are the water equivalent to hiking trails. They are created to facilitate recreation in and along rivers and water bodies and are found in urban settings as well as remote environments. They may also be used for commuting purposes.[56]

**Brownfield:** A brownfield is real property (e.g., a parcel of land), the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant.[57]

**Business improvement district:** Business improvement districts (BIDs) are an expansion of the Principal Shopping Districts Act of 1961. BIDs allow qualified downtown and commercial areas to levy a special assessment to fund improvements to the district.[58]

**Capital expenditure plan:** Also called a capital improvement plan, a capital expenditure plan is a schedule or budget, usually covering five years and updated annually, for funding capital improvements. Capital improvements can include buildings, sanitary and storm sewer facilities, water systems, roads and highways, sidewalks, and parks and open space. A capital improvement plan is one of the major tools for implementing comprehensive plans. It includes a list of projects, priorities, estimated costs, financing methods, and time schedules for project completion.[59]

**Charrette:** A charrette (sometimes spelled charette and often called "design charrette") is a community planning and design technique for consulting with stakeholders and incorporating their concerns in final development designs. Charrettes are typically intense, possibly multi-day meetings that bring municipal officials, developers, community residents, and other local stakeholders together with planning, architecture, and design professionals. A charrette promotes joint ownership of the solution and attempts to diffuse traditional confrontation between communities and developers.[58]

**Clean Marina Program:** A Clean Marina Program is a voluntary, incentive-based program promoted by the National Oceanic and Atmospheric Administration (NOAA) and others that encourages marina operators and recreational boaters to protect coastal water quality by engaging in environmentally sound operating and maintenance procedures. While Clean Marina Programs vary from state to state, all programs offer information, guidance, and technical assistance to marina operators, local governments, and recreational boaters on best management practices that can be used to prevent or reduce pollution. Marinas that participate in the Clean Marina Program are recognized for their environmental stewardship.

**Coastal and Estuarine Land Conservation Program:** The Coastal and Estuarine Land Conservation Program is a land conservation program run by NOAA and established to protect coastal and estuarine lands considered important for their ecological, conservation, recreational, historical, or aesthetic values. The program provides matching funds to state and local governments to acquire outright, or protect through conservation easement, properties they have prioritized for conservation. Lands may only be purchased from willing sellers and are protected in perpetuity.

**Coastal county:** A coastal county meets one of the following criteria: (1) a minimum of 15 percent of the county's land area is located within a coastal watershed or (2) part of the county accounts for at least 15 percent of a "coastal cataloguing unit." For more information see: NOAA, National Ocean Service. *Population Trends along the Coastal United States: 1980-2008*. U.S. Department of Commerce, NOAA, 2004.[60]

**Coastal viewshed:** The coastal viewshed encompasses the area of coastal land and water that is visible from one or more viewing points.

**Community asset inventory:** A community asset inventory is a list of a community's assets, including community-based service and advocacy organizations, religious institutions, public institutions, businesses, schools, locally owned real estate, and parks and public spaces where residents can socialize or just enjoy being outside. Developing an inventory of a community's assets helps people understand the diversity of their community as well as what their friends and neighbors value and consider important to life in the community.[61]

**Community land trust:** Community land trusts are private non-profit corporations created to acquire and hold land for the benefit of a community and to provide affordable access to land and housing for community residents. Their missions are often shaped by the intent to meet the needs of residents least served by the prevailing market.[62]

**Community vulnerability assessment:** A community vulnerability assessment assesses a community's vulnerability to hazards. Vulnerability is the susceptibility of people, property, and resources to negative impacts from hazard events. A vulnerability assessment can be a guide for developing hazard mitigation strategies and prioritizing hazard mitigation projects. One approach to community vulnerability assessment is to evaluate a community's physical, social, environmental, and economic vulnerabilities.[63]

**Concurrency policies:** Concurrency policies require that adequate public facilities either are in place when new development is approved or will be in place within two years.[64]

**Condo-hotel:** Condo-hotels typically are high-rise buildings developed and operated as luxury hotels, usually in major cities and resort areas. These hotels have condominium units that allow individual ownership of each unit. When property owners are not using their condo-hotel unit, they can let the hotel chain rent it out as if it were a hotel room.[65]

**Conservation easement:** A conservation easement is a voluntary agreement between a private landowner and a municipal agency or qualified not-for-profit corporation to restrict the development, management, or use of the land. The agency holds the interest and is empowered to enforce the agreed-upon restrictions against the current landowner and all subsequent owners of the land.[55]

**Current use taxation program:** Current use taxation designations give landowners a tax break when the "current use" of their land meets the criteria for farm/agricultural land, timber land, open space, or forest land. Current use lands are taxed according to the value of their current, existing use instead of the presumably higher market value of the land if it were developed for residential, commercial, or industrial use.[66]

**Deed restriction:** A deed restriction is a requirement placed in a deed to restrict the current and future use of the land in some way.[55]

**Density bonus:** A density bonus lets a developer build a larger number of market-rate units on a site than would otherwise be permitted in order to provide an incentive for the construction of affordable housing or another public good.[58]

**Ecological history:** Ecological history "traces the ongoing dialectical relations between human acts and acts of nature, made manifest in the landscape." [67]

**Fix it first policy:** A fix it first policy makes upgrading existing public facilities a community's first priority. Fix it first policies direct public investment to maintaining and upgrading the streets, highways, sidewalks, water and sewer systems, lighting, schools, and other civic buildings and facilities that have already been built in a community. This helps maintain the value of investments already made in the community by both public and private sources, and it can help attract additional investment in rehabilitation and redevelopment projects.[68]

**Floor-to-area ratio bonus:** A floor-to-area ratio (FAR) bonus is an allowed increase in the amount of buildable space relative to the area of the land upon which the building is sited. This bonus can be negotiated on a floor-by-floor basis to permit buildings to cover more of the site at ground levels, and step back from the street at higher levels. FAR bonuses are particularly useful to support form-based codes because they allow the design of the building to be adjusted to both achieve higher density, and ensure adequate air flow, light, and visibility between buildings.

**Geographic information system (GIS):** A geographic information system (GIS) is a computerized database that integrates hardware, software, and data for capturing, storing, analyzing, and displaying locationally defined information. GIS allows users to view, question, and interpret data in ways that reveal relationships, patterns, and trends in the form of maps, reports, and charts. Commonly, a GIS portrays a portion of the earth's surface in the form of a map on which this information is overlaid.[69]

**Green infrastructure:** Green infrastructure is defined by a range of natural and built systems that can occur at the regional, community, and site scales. At the larger regional or watershed scale, green infrastructure is the interconnected network of preserved or restored natural lands and waters that provide essential environmental functions. Large-scale green infrastructure may include (but is not limited to) forested corridors and hubs that provide multiple services, including habitat and water resource protection. At the community and neighborhood scale, green infrastructure incorporates urban forestry practices that reduce impervious surfaces and help create walkable, attractive communities. At the site scale, green infrastructure mimics natural processes to help infiltrate, evapotranspire, capture, and reuse stormwater to maintain and restore natural hydrology. Site scale green infrastructure practices, sometimes referred to as low impact development (LID) techniques, include but are not limited to rain gardens, ecoroofs, permeable pavements, and cisterns or rain barrels.

**Green roof:** A green roof is a roof planted with vegetation. Intensive green roofs have thick layers of soil (6 to 12 inches or more) that can support a broad variety of plant or even tree species. Extensive roofs are simpler green roofs with a soil layer of 6 inches or less to support grasses or other ground cover.[70]

**Groin:** A groin is a structure built perpendicular to the shore that traps sand to stabilize eroding shorelines.

**Harbor management plan:** Municipal harbor management plans are a means for communities to plan and manage uses in coastal waters to support waterfront land use plans and regulations. The goals are to integrate the community's land and water use objectives, promote water-dependent uses, minimize conflicts among competing users, coordinate multi-jurisdictional (state and municipal) decision-making, and protect coastal resources. Depending on the enabling authority, harbor management plans may cover just the water area and complement the community's waterfront master plan or may include both the water and the adjacent land area.[71]

**Hazard mitigation plan:** A hazard mitigation plan is a plan that forms the foundation for a community's long-term strategy to reduce impacts from future disasters. Hazard mitigation is sustained action taken to reduce or eliminate long-term risk to people and their property from hazards.[72]

**Historic district:** Historic districts are officially designated by local ordinance or by state or federal government action. Historic districts have defined geographic boundaries, within which are properties or buildings that may or may not be landmarks, but which contribute to the overall historic character of the designated area. Historic districts are also referred to as "historic preservation districts."[58]

**Hub-and-spoke:** In a working port context, hub-and-spoke refers to transportation connections arranged like a wheel, where traffic moves along spokes connected to a hub in the center. In the marine transportation system, the working port is the hub.[73]

**Impervious surface:** Impervious surfaces are mainly constructed surfaces—rooftops, sidewalks, roads, and parking lots—covered by impenetrable materials such as asphalt, concrete, brick, and stone. These materials seal surfaces, repel water, and prevent precipitation and meltwater from infiltrating soils. Soils compacted by urban development are also highly impervious.[74]

**Inclusionary zoning:** Inclusionary zoning requires that some portion of every new housing development (e.g., 10%) beyond a given threshold size (e.g., 50 units) will be affordable to below-median-income residents to both increase the number of affordable units and create mixed income communities. Some inclusionary zoning programs permit developers to make "in lieu" contributions to a regional housing trust fund to construct affordable housing, rather than requiring units to be constructed on site.

**Infill development:** Infill development is development or re-development of land that has been bypassed, has remained vacant, or is underused as a result of the surrounding development process. Generally, infill areas or sites are not of prime quality; however, they are usually served by or are readily accessible to the infrastructure services and facilities provided by the applicable local governmental entity. Use of such lands for new housing or other urban development is considered a more desirable alternative than supporting continued extension of the development pattern laterally and horizontally out from the existing community, which would entail higher capital improvement costs than would be required for infill development. The use of infill development, among other strategies, promotes efficient use of resources and contributes to the economic health of existing communities.[75]

**Intertidal zone:** The area along the shoreline that is submerged at high tide and exposed at low tide.

**Live-near-your-work program:** Live-near-your-work programs provide financial incentives that encourage people to live near their workplaces. The intention is to reduce traffic congestion and vehicle miles travelled, thus generating environmental benefits such as reduced air and water quality impacts. Incentives can include rent subsidies and special loans or grants to purchase homes.[76]

**Living shoreline:** Living shorelines are stabilization techniques that restore, protect, and enhance the natural shoreline environment by mimicking nature. Nonstructural approaches include vegetative plantings and sand fill; hybrid techniques combine vegetative planting with low rock sills. These approaches can be effective alternatives to "hard" stabilization structures such as bulkheads, riprap, or groins.[77]

**Live-aboard housing:** Live-aboard housing involves the use of a watercraft as a permanent or temporary residence, and is typically located in a marina, alongside a dock, or in a mooring field.

**Local waterfront revitalization plan:** A local waterfront revitalization plan is a locally prepared land and water use plan and strategy used in New York for a community's waterfront that addresses critical issues and refines waterfront policies to reflect local conditions and circumstances.[78]

**LID (low impact development):** Low impact development is an approach to land development, or redevelopment, that works with nature to manage stormwater as close to its source as possible in order to maintain or restore natural hydrologic function. Recently, this term has come to be used interchangeably with the term "site-scale green infrastructure practices."[79] (See Green Infrastructure.)

**Marine conservation agreement:** Marine conservation agreements are formal or informal agreements between parties to exchange benefits, take or refrain from certain actions, or transfer certain rights and responsibilities to restore and protect fragile coastal and marine ecosystems.[80]

**Natural hazard:** A natural hazard is a natural process that threatens lives, property, and other assets. Often, a natural hazard can be predicted and tends to occur repeatedly in the same geographical location. [81]

**Overlay district:** An overlay district is a zoning technique that allows a jurisdiction to superimpose additional requirements over a basic use zoning district without disturbing the requirements of the basic use district. In the instance of conflicting requirements, the stricter of the conflicting requirements applies.[58]

**Park-once strategy:** A park-once strategy is an approach to promoting "walkable communities" through which ample parking facilities are provided within safe walking distance and easy access of a variety of destinations, including waterfront areas and land-based transportation options. Park-once strategies let residents, workers, and visitors "park once," leaving their car behind and using others means (e.g., walking, community shuttles, bicycle rentals) to get to their desired destination(s) within the community.[82]

**Pedestrian master plan:** A pedestrian master plan provides the rationale, goals, objectives, strategies, standards, and maps for implementing a comprehensive approach to making a community safe and walkable for people travelling on foot. This includes approaches for linking sidewalks, walking paths, and pedestrian-related facilities and amenities.[75]

**Policy audit:** A policy audit is typically a checklist that guides the review of a community's land use and development policies to help evaluate whether those policies support the community's vision for smarter growth. Policy audits can help identify areas in which a community's intentions are at odds with existing policy statements and implementation rules (e.g., comprehensive plans, zoning codes, building codes, street design requirements, and infrastructure financing priorities).[83]

**Public trust doctrine:** The Public Trust Doctrine provides that public trust lands, waters, and living resources in a state are held by the state in trust for the benefit of the public, and establishes the rights of the public in public trust lands, waters, and living resources for a variety of uses. The public trust doctrine may be applicable whenever tidelands, navigable waters, or submerged lands are altered, developed, conveyed, or otherwise managed or preserved. It may apply whether the trust lands are publicly or privately owned. In addition to establishing the rights of the public in these lands and waters, the doctrine also imposes limitations on the states and the public and private owners, as well as establishing duties and responsibilities of the states when managing these public trust assets.[84]

**Purchase of development rights:** Purchase of development rights (PDRs) programs place a permanent restriction on the land, protecting it from all future development. PDRs are typically used to protect and conserve natural lands (such as open meadows or forests) or rural lands (including farmland). Owning land conveys a set of rights, including the right to develop the land for residential, commercial, or industrial use (subject to applicable zoning restrictions). Under a PDR program, property owners can choose to sell their development rights to a land trust or other entity. A permanent deed restriction is then placed on the property.[85]

**Rehab code:** A rehab code, also known as a "rehabilitation code" or a "building rehabilitation code," is a code designed to permit, encourage, and facilitate the re-use of existing buildings by exempting them from new construction code requirements that are not necessary to renovation and might make the renovation and rehabilitation of existing buildings economically uncompetitive.[86]

**Riprap:** Riprap consists of broken stone, cut stone blocks, or rubble that is placed on slopes to protect them from erosion or scour caused by floodwaters or wave action.[87]

**Riparian habitat:** Riparian habitat refers to a stream or river, its bordering lands within the floodplain, and the areas that contribute leaves, wood, and other materials to the stream or river, including canopy cover. Riparian habitat provides home and shelter to animals, insects, and plants and often includes wetlands.[88]

**Rolling easement:** A rolling easement is a policy approach that preserves natural habitats and public access to the coast as shorelines erode or retreat by requiring structures to be removed once they are no longer on dry land (because submerged land is publicly owned under the public trust doctrine). Usually, engineered shore protection measures are prohibited. As the sea advances, the easement automatically moves or "rolls" landward. [89]

**Special Area Management Plan:** Special Area Management Plans (SAMPs) are resource management plans and implementation programs developed to better manage specific geographic areas, such as an urban waterfront. SAMPs also supplement existing management programs to help address complex multijurisdictional coastal issues. SAMPs have increased cooperation among coastal localities and provided a more comprehensive approach to addressing coastal issues. For example, the communities of New Bedford and Fairhaven, Massachusetts, developed a multijurisdictional SAMP for their harbor that protects water-dependent port uses and identifies areas for waterfront revitalization.

**Smart Growth Network:** The Smart Growth Network is a coalition of national and regional organizations united in the belief that where and how we grow matters. For additional information, see *www.smartgrowth.org*.

**Stakeholder analysis:** Stakeholder analysis is a technique for identifying and assessing the importance of key people, groups of people, or institutions that may significantly influence, or will be significantly influenced by, a proposed activity or project. It can be

used to identify people, groups, and institutions that will affect a proposed initiative or project (either positively or negatively), help anticipate the kind of influence to expect, and develop constructive strategies to get the most effective support, and most constructive involvement, possible.[90]

**Stormwater fee discount:** A stormwater fee discount reduces stormwater fees for property owners who implement measures to manage and reduce stormwater runoff.[91]

**Sustainable:** Sustainable, from an ecological standpoint, is the ability to meet the needs of the present human generation without compromising the integrity of the ecosystems that future generations (human and other) will need to rely upon to meet their needs.[92]

**Tax abatement/exemption:** Tax abatement/exemption is a strategy to lower, restrict, or otherwise reduce the tax burden associated with a piece of property in exchange for the provision of a desired public good. Tax exemptions make the property owner "exempt" from part or all of the taxes related to the improvements upon a property for a fixed period of time.[93]

**Tax increment financing district:** A tax increment financing (TIF) district is a tool used by cities and other development authorities to finance certain types of development costs. The public purposes of a TIF are the redevelopment of blighted areas, construction of low- and moderate-income housing, provision of employment opportunities, and improvement of the tax base. With a TIF, the taxing entity "captures" the additional property taxes generated by the development over and above the pre-development tax revenue, and uses the resultant "tax increments" to finance the development costs.[58]

**Tiered development:** Tiered development is development where the height of buildings increases as one moves away from the coast or waterfront. This optimizes panoramic water views for more buildings.

**Transfer of development rights:** Transfer of development rights programs create a market for selling development rights on one parcel of land and conveying them to another. These rights are transferred away from areas designated for preservation, such as agricultural and forestry lands, towards areas deemed appropriate for development and higher density.[75]

**Transit-oriented development:** A transit-oriented development (TOD) is a development with a mix of land uses (e.g., residential, office, shopping, civic, and entertainment) within easy walking distance of a transit station. The close proximity of transit decreases people's dependence on driving for meeting their everyday needs. Reducing vehicle miles travelled in this way can help lower air emissions. TODs can also benefit regional water quality by concentrating development and reusing previously developed land, thereby reducing development pressure on open space. Reuse of previously developed land often means accommodating new development without any net increase in impervious surface or runoff.[94]

**Visioning exercise:** Visioning is a participatory planning process that seeks to create a shared image of a desired future for a community. To do this, citizens and stakeholders actively engage in discussions and exercises about alternative futures. Successful visioning processes lead to broad agreement about a preferred future, which in turn lead to implementation strategies involving changes in public policy and actions.[95]

**Visual preference survey:** A visual preference survey is a technique that helps a community determine what attributes they value in overall community design. As the name implies, the technique is based on the development of one or more visual concepts of a proposed plan or project. The actual technique may rely on sketches, photographs, computer images, or similar techniques to provide the basis for participants to rate or assess each visual depiction. As a result, participants can express judgments and possibly reach a consensus about a visual design, architecture, site layout, landscape, and similar design features, which may be incorporated in the goals, objectives, design guidelines, enhancement/mitigation measures, or recommended standards for a study, plan, or project. Visual preference surveys can also be used at the beginning of a planning process to help participants identify what they value most about their community. In this application, a series of photographs are used, usually from the community itself but they can be from elsewhere, to help people identify what it is they like, and dislike, about various aspects of community design, including roads, buildings, and open space.[96]

**Visualization software:** Visualization software is image editing software that digitally alters images of real places to create photo-realistic simulations of proposed changes. Digital images of the planning area are modified with proposed design features, such as new buildings, bike lanes, trolley cars, streetlights, or natural features like trees, to give the public, designers, and decision makers a better sense of the impact of proposed changes on the built or natural environment.[97]

**Walkability tour:** A walkability tour is a tour (usually on foot) to evaluate how pedestrian friendly and walkable an area is. Through a walkability tour, the overall "feel" of the community's streets is assessed with regard to how comfortable and safe those streets feel to a person walking along them. Walkability tours look at many factors, including how parking is handled, how wide the streets are, how many "curb cuts" intersect the sidewalk, the location of street trees and street "furniture" (e.g., benches), as well as how buildings are designed and the ways in which buildings do or do not interact with the pedestrian environment.

**Water-dependent uses:** While the definition of water-dependent use varies among states and locales, a water-dependent activity typically requires the use of, location on, or direct access to navigable waters or submerged lands to achieve its primary purpose, whether it is recreational, commercial, or industrial. Such water-dependent uses include fishing facilities, marinas, and ports, and are important to maintaining the viability of working waterfronts.

**Waterfront master plan:** A waterfront master plan is a comprehensive long-range plan for the waterfront intended to guide growth and development.

*Glossary definitions are from a variety of sources. The numbers at the end of glossary entries correspond with the sources listed in the endnotes.

# Endnotes

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