Community Design

This guidance is intended to clarify how the Community Design Goal and Objectives of the Regional Policy Plan (RPP) are to be applied and interpreted in Cape Cod Commission project review. This technical bulletin presents specific methods by which a project can meet the goal and objectives.

Community Design Goal: To protect and enhance the unique character of the region's built and natural environment based on the local context.

- ***Objective CD1*** *– Promote context-sensitive building and site design*
- ***Objective CD2*** *– Minimize the amount of newly disturbed land and impervious surfaces*
- ***Objective CD3*** *– Avoid adverse visual impacts from infrastructure to scenic resources*

The applicability and materiality of these goals and objectives to a project will be determined on a case-by-case basis considering a number of factors including the location, context (as defined by the Placetype of the project's location), scale, use, and other characteristics of a project.

THE ROLE OF CAPE COD PLACETYPES

The RPP incorporates a framework for regional land use policies and regulations based on local form and context as identified through categories of Placetypes found and desired on Cape Cod.

The Placetypes are determined in two ways: some are depicted on a map contained within the RPP Data Viewer located at www.capecodcommission.org/RPPDataViewer adopted by the Commission as part of the Technical Guidance for review of DRIs, which may be amended from time to time as land use patterns and regional land use priorities change, and the remainder are determined using the character descriptions set forth in Section 8 of the RPP.

The project context, as defined by the Placetype of the project's location, provides the lens through which the Commission will review the project under the RPP.

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INTRODUCTION

Cape Cod is a unique and special place in terms of both its natural and built environments. The diverse landscape includes historic villages and distinctive architecture that combine traditional forms and materials in a variety of different styles. The region's history and natural environment have shaped development into a recognizable local aesthetic and a regional pattern of dense village centers surrounded by less-developed outlying areas.

Maintaining Cape Cod's unique character is essential to the region's continued economic health and to the quality of life of its residents. Yet, as the Cape continues to grow in population and popularity, new development poses challenges brought by land-consumptive development patterns and incompatible designs. In order to protect the region's distinctive character, new development needs to respect old and established patterns in both building and site design and project siting. This is the essence of context-sensitive design: design that responds to and respects its surroundings, promoting continued vitality for the region and reinforcing the Cape's strong 'sense of place.'

Context-sensitive design relates to its surrounding neighborhood, environment and regional traditions. In its design, it meets not only the project goals, but also those related to preserving scenic, aesthetic, historic, environmental and other community values. Context-sensitive design recognizes the scale and placement of existing surrounding buildings and follows established patterns, whether they are tall buildings sited close to the street, low buildings clustered in a tight neighborhood, or structures set well back from the road and screened by vegetation. It recognizes regional traditions in building materials and building forms, which on Cape Cod includes small attached massings, sloped roofs, and wood siding materials. It also follows more compact land use patterns to help preserve Cape Cod's natural resources and distinctive character. The Cape Cod Commission's publication "Contextual Design on Cape Cod," explains the principles of context-sensitive design through guidelines and illustrations. It is the basis for many of the methods explored in this Technical Bulletin. See the full document at: capecodcommission.org/resource-library/file/?url=/dept/commission/team/Website_Resources/design/ContextualDesignCapeCod.pdf

Cape Cod Placetypes are one way of describing and asserting the various contexts that exist in the region, and they are helpful in identifying appropriate designs based on a project's location.

While there is room for modern design and contemporary interpretation, new buildings should incorporate traditional design elements to support the region's existing character. By guiding development to follow compact land use patterns and limiting building footprints and paved areas, we will better maintain natural lands and preserve the distinction among different Placetypes while working to re-establish regional patterns in areas that have existing highway-oriented development.

Cape Cod has a wide variety of scenic resources that contribute to the region's unique sense of place. The character of scenic resources results from the interplay of geology, landform, soils, vegetation, land use and settlement patterns and is made up of a wide variety of features, patterns, and characteristics. Open ocean waters, natural areas, cliffs, dunes, historic resources, open fields, wooded road edges, views to water or historic villages, and scenic roadways may all be considered scenic resources.

The Cape's scenic resources vary in their quality, value, and ability to absorb changes. New infrastructure and large-scale developments must be sited carefully to limit impacts to these resources, especially in areas with a distinctive built or natural character. Visual and scenic resources play a direct role in people's enjoyment of Cape Cod, and their preservation has a direct impact on the region's continued economic vitality.

DEFINITIONS

Adverse Visual Impact: Where the degree of change in the scenic quality resulting from Development is expected to unreasonably impact or interfere with a scenic resource or otherwise unreasonably alter the character, setting, or quality of a scenic resource.

Scenic Resources: Locations or areas that are recognized, utilized, and enjoyed by the public for their visual and scenic qualities and whose features, views, patterns, and characteristics contribute to a distinct sense of appreciation of the natural and cultural environment.

Scenic resources on Cape Cod include, but are not limited to:

- National, State and Regional Parks, marine sanctuaries and wildlife refuges from the U.S. Geological Survey, U.S. Fish and Wildlife, Massachusetts Department of Environmental Management, and Massachusetts GIS.
- Historic Districts listed by the Massachusetts Historical Commission in the State Register of Historic Places, Old King's Highway and other Historic Districts, as well as other individually listed properties. Information about individual properties, both within and outside of historic districts is also compiled on MACRIS (Massachusetts Cultural Resources Inventory System) [see also the Cultural Heritage Technical Bulletin].
- Municipally designated scenic roads.
- Scenic vistas or viewpoints, e.g., scenic canal overlooks in Bourne; Nobska Light in Falmouth; and Scargo Tower in Dennis.

Scenic Road: A public road that has one or more of the following characteristics:

- Passes through an area of outstanding natural environmental features providing views of scenic elements such as salt marshes, rivers, bays, dunes, and the ocean;
- Provides outstanding views of rural, agricultural landscapes including scenic elements such as panoramic or distant views, cropland, pastures, fields, streams, ponds, hedgerows, stone or wooden fences, farm buildings, and farmsteads;
- Follows historic road alignments and provides views of historic resources;
- A large proportion of the road provides frontage for properties that are in a historic district or subject to perpetual or long-term agricultural, environmental or historic easements; or,

- Is designated by a municipality as a scenic road.

Visual Impact: The degree of change in scenic quality resulting from Development.

Visual Impact Assessment (VIA): The process for determining the degree of change in scenic quality resulting from Development, including but not limited to establishing the zone of visual influence, identifying Visual and Scenic Resources, preparing visual simulations, and assessing the magnitude of the proposed change.

SUMMARY OF METHODS

GOAL | COMMUNITY DESIGN

To protect and enhance the unique character of the region's built environment based on the local context.

Objective CD1 – Promote context-sensitive building and site design

METHODS

- Relate siting of development to existing building and streetscape patterns
- Follow regional and local scale of development
  - New building footprints must be under 6,000 square feet in Historic, Maritime, Rural, and Natural Areas, and under 15,000 square feet in Community Activity Centers and Suburban Development Areas.
  - For every 50 feet of façade length, at least 10 feet of projection or setback must be included.
- Use regionally appropriate forms and materials
- Locate parking where it does not adversely impact visual character of the area
  - Landscaped islands in parking areas should be at least 10-12 feet wide with trees planted 25-40 feet apart. Trees should be a minimum of 3 inches in diameter when planted.
  - Landscaped islands should comprise 20% of the parking field.
- Provide appropriate landscaping and pedestrian amenities
- Ensure lighting protects dark skies and signage fits with community character

OBJECTIVE CD1 AREAS OF EMPHASIS BY PLACETYPE

Natural Areas | New development is discouraged. Redevelopment should be limited to small scale buildings and clustered in small areas that are mostly screened from view.

Rural Development Areas | Limit development to small scale buildings and cluster in small areas that can be screened from view.

Suburban Development Areas | Re-establish traditional patterns with buildings close to the street and parking to the side or rear.

Historic Areas and Maritime Areas | New development should conform with established patterns and should be consistent with traditional structures and uses.

Community Activity Centers | New and redevelopment encouraged in these areas. Build in traditional patterns with buildings close to the roadway and focus on providing pedestrian amenities and defining the streetscape.

Industrial Activity Centers and Military and Transportation Areas | Design flexibility is allowed in these areas as long as there is limited visibility from areas outside these Placetypes.

Objective CD2 – Minimize the amount of newly disturbed land and impervious surfaces

METHODS

- Reuse and redevelop existing buildings, structures and sites
- Cluster development
- Minimize total parking spaces to no more than what is required by zoning
- Develop multi-story buildings where appropriate
- Provide parking under or within buildings or in structures
- Use permeable or pervious materials
- Maintain existing native vegetation and revegetate disturbed sites

OBJECTIVE CD2 AREAS OF EMPHASIS BY PLACETYPE

Natural Areas | New development strongly discouraged. Reuse and redevelopment should minimize or reduce existing development footprints.

Rural Development Areas | Reuse and redevelopment encouraged. All development should be clustered, respect the surrounding landscape, and protect scenic resources.

Suburban Development Areas | Concentrate development into nodes; minimize and reduce parking area footprints.

Historic Areas | Reuse historic structures; infill development should reflect historic context.

Maritime Areas | Reuse historic structures; infill development should reflect context.

Community Activity Centers | Reuse, redevelopment, mixed use, and multi-story development encouraged; minimize parking through design or shared parking.

Industrial Activity Centers & Military and Transportation Areas | Reuse and redevelop when possible; minimize impervious areas.

Objective CD3 – Avoid adverse visual impacts from infrastructure on scenic resources

METHODS

- Site infrastructure away from scenic resources
- Design and scale infrastructure appropriate to context
- Collocate infrastructure with other existing infrastructure and/or within buildings
- Utilize previously developed and/or impervious areas
- Locate infrastructure underground where feasible
- Screen infrastructure with vegetative buffers, buildings, or other structures

OBJECTIVE CD3 AREAS OF EMPHASIS BY PLACETYPE

Natural Areas | Avoid siting in these areas except where necessary to protect public health and safety.

Rural Development Areas | Avoid siting in open landscapes; minimize height to that of existing tree canopy.

Suburban Development Areas | Avoid visual impacts to surrounding neighborhood through buffering and/or siting.

Historic Areas | Avoid siting in these areas or ensure no visual impacts on historic resources.

Maritime Areas & Community Activity Centers | Ensure infrastructure is similar in scale to surrounding development.

Industrial Activity Centers & Military and Transportation Areas | Generally appropriate; buffer from residential areas.

DETAILED DISCUSSION OF METHODS FOR METEING OBJECTIVE CD1

Objective CD1 *– Promote context-sensitive building and site design*

The following methods may be implemented to demonstrate consistency with Objective CD1.

Relate siting of development to building and streetscape patterns

Historically, the pattern of development within the Cape's village centers consisted of buildings that were close to the road and oriented with their narrower façade facing the street. This pattern of development produced a strong sense of enclosure to the street and established a setback pattern that continues to help define the region's character.

In many locations on the Cape, the edge of the street is very well defined by either buildings, walls, fences, or trees. Twentieth century zoning regulations have encouraged development in other areas that conflicts with historic and traditional settlement patterns. Linear commercial areas are often oriented to the automobile and typically characterized as having poorly defined road edges with parking close to the street and buildings far from the street edge. This is in stark contrast to the traditional village pattern of development seen in the region. Following is a discussion of ways to site new development in the Cape Cod landscape, following traditional streetscape patterns.

FOR ALL PROJECTS

- **Follow traditional setbacks**: New development should follow traditional setback patterns, whether close to the road edge or set behind small front yard areas. Site new buildings to reinforce the existing building setbacks which help define the streetscape edge. If new construction must be placed farther back than existing structures, use low walls and vegetation to continue the established street edge.

- **Locate new construction behind existing frontage buildings or vegetation**: As an alternative to siting a large building on the street, place structures with more modest forms at the street edge to match existing street patterns and to shield the larger building behind. Placing larger buildings behind existing structures or newly constructed, traditionally scaled buildings will screen the larger buildings and

associated parking areas to the rear and also assure that the traditional streetscape pattern is continued.

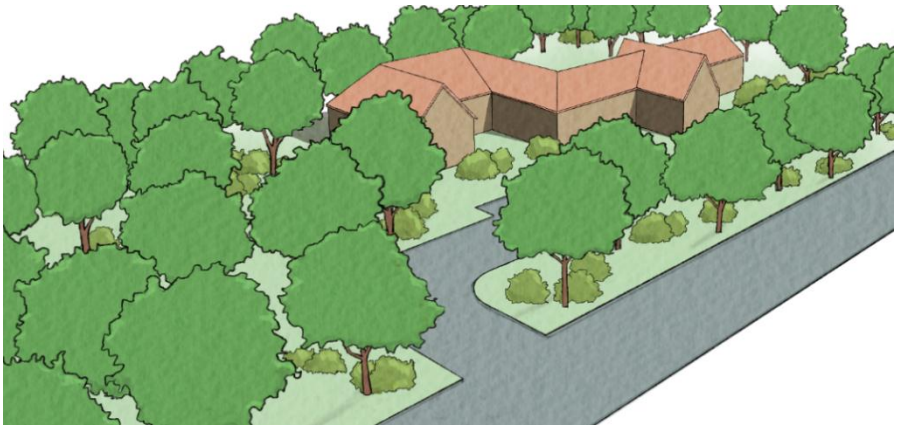
- **Maintain the distinction between developed and outlying areas**: Locate new development within Community Activity Centers and existing village centers whenever possible. If locating outside these areas, site new development behind existing vegetated areas to maintain open landscapes and wooded roadway character.

- **Design streets and roadways in scale with the surrounding context**: If an area has a distinctive roadway design or scenic character, any new roadways should be designed consistent with the existing character. Narrower roadways are generally preferred to slow traffic and provide comfort for pedestrians and bicyclists. On-street parking in appropriate areas can also create streets that are better-suited to accommodate all users.

FOR PROJECTS IN NATURAL AREAS AND RURAL DEVELOPMENT AREAS

- **Maintain established roadway character**: Preserve the landscape character of existing roadways, whether wooded or open landscapes with few structures. Site buildings outside key view areas and sensitive natural resources. Maintain the existing road width and layout and avoid more urban details such as granite curbing.

- **Design meandering entrance roads**: Entrance roads or site accesses should meander through a vegetated buffer to limit views into the site. Trees are especially important along access roads to limit broad views of new development and to provide enclosure in context with outlying areas.



A meandering site access road limits views into the site.

- **Site outside open landscapes**: New development in these areas should locate at the periphery of open landscapes and away from scenic vistas or further reduce visual prominence by siting behind or near woodland edges. Any new development should be designed consistent with existing development density and should follow established relationships between existing buildings and the roadway.

FOR PROJECTS IN SUBURBAN DEVELOPMENT AREAS

- **Create focal points of denser commercial development**: In strip commercial areas, focus on re-establishing traditional streetscape elements with dense clusters of buildings surrounded by less densely developed areas.

- **Bring buildings closer to the street**: Site new buildings near the roadway to re-establish the street edge and relate the building to the street, or to shield larger elements of the development to the rear.

- **Move parking to less visible areas**: Re-locate parking to the side or rear of the development to reduce its prominence. In some cases, parking can be successfully incorporated into a parking structure that occupies the lower level or rear portion of a building. Where re-locating parking is not possible in the short term, add landscape walls and buffer plantings to effectively screen paved areas.

- **Improve pedestrian amenities**: Add sidewalks and pathways that bring pedestrians along the front facades of buildings. Add shade trees, gardens, seating areas and other pedestrian amenities along the road frontage of new development.

- **Use cluster to reduce residential development footprints**: Residential subdivisions of the 1960s and 1970s are land-consumptive and do not mirror traditional development patterns. New development in these areas should be clustered to respect existing topography, protect sensitive natural resources, and preserve high-quality open space. Cluster development should also minimize the length of new roadways and utilities and create amenities on site for use by residents of the neighborhood.

FOR PROJECTS IN MARITIME AREAS

- **Set buildings back from eroding shorelines**: In areas where the shoreline is eroding, the setback for all new buildings and septic systems should be at least 30 times the average annual erosion rate of the dune or eroding bank and projects are encouraged to consider up to 70 times the average annual rate. Shoreline change maps, developed by the Massachusetts Coastal Zone Management Office, and historic photos can help to evaluate long term erosion trends.

- **Maintain facilities that support water dependent uses**: Docking and unloading facilities for commercial fishermen, marinas for public and private vessel use, ferry terminals, and areas for charter boats and whale watching are all water-dependent facilities that should be maintained. Loss of these waterfront facilities results in a loss of traditional economic activity in the community. Maintenance of these facilities, coupled with access for the public, such as walkways, observation areas and boat launch facilities generate public interest and activity on the waterfront.

- **Maintain and enhance physical and visual access to the coast**: Public access to the shoreline should be provided in waterfront locations. New walkways are encouraged if they enhance shoreline access for the public, including people with disabilities, but they should not be pursued if they degrade undisturbed resources or create adverse impacts to habitat, aesthetics, or storm damage prevention. Where physical access is not appropriate or feasible, visual access should be provided. This can be done by siting multiple buildings to provide views between them, or by providing an arch or walkway to allow views between buildings. Visual impact from the water should be considered when designing the structure, to maintain maritime character and the natural beauty of the shore.

FOR PROJECTS IN HISTORIC AREAS AND COMMUNITY ACTIVITY CENTERS

- **Maintain setback patterns and building scale along the road frontage**: Design new buildings to front on the street and to maintain established setback patterns, consistent with traditional village design. If appropriate, orient the narrower facade to the street to be consistent with existing facade widths.

- **Activate the street-facing facade**: Include a street-oriented entrance and principal windows on the street-facing facade to reinforce the building's primary relationship to the street and encourage pedestrian activity. In commercial areas, consider incorporating porches or other pedestrian amenities in the design.

- **Site infill development to the rear to preserve desirable existing streetscape patterns**: Consider infill development on the rear portion of lots to allow additional activity in already developed areas while maintaining existing streetscape patterns.

FOR PROJECTS IN INDUSTRIAL ACTIVITY CENTERS AND MILITARY AND TRANSPORTATION AREAS

- Design flexibility is allowed in these areas as long as there is limited visibility of the development from areas outside these Placetypes.

Follow regional and local scale of development

Cape Cod's buildings are traditionally modest in scale and comprised of a series of small massings that reflect their gradual growth and expansion over time. While some larger buildings and estates began to be constructed in the region in the late 1800s, the majority of structures remained small in size. To maintain this traditional and predominantly residential scale that defines most of the Cape's villages, new buildings should appear similar in size to historic structures or they should be sited behind smaller buildings or vegetation that can screen their bulk from public view. This is especially important in Natural and Rural Development Areas where wooded or open landscapes should be dominant, and in Historic or Maritime Areas where traditional building styles should be most prominent. Where existing local development is clearly defined and guided by historic traditions, that scale should inform any new development. In all other locations, new development should reflect regional building scale and traditions. The following narrative presents a variety of ways to fit a new building into the Cape landscape, focusing on how to reduce the apparent building size to make it consistent with the local development scale.

FOR ALL PROJECTS

- **Break down large building masses**: Separate the building mass into various structures that more closely approximate the size of traditional buildings in the region. Building masses should be consistent with the established pattern in the area but should generally not exceed a footprint of 6,000 square feet in Historic, Maritime, Rural, and Natural Area Placetypes, and should generally not exceed a footprint of 15,000 square feet in Community Activity Centers and Suburban Development Area Placetypes. Several smaller building masses may be grouped around a central courtyard or arranged as a primary building with several attached ells to mimic traditional regional patterns.

  Along roadways, orient the short axis of the building parallel to the street to maintain a building profile that is more consistent with the region's traditional scale.

- **Vary the roof form**: Vary the height of the roof line at both the roof peak and the eaves to break large roof masses into smaller elements and to vary their relationship to the ground. Incorporate several different roof forms on different parts of a large building, following historical examples. Gable, shed, and hip roofs are compatible with regional styles and can be effectively combined on a single building.

  Flat roofs are discouraged but not prohibited, as they may be appropriate in some areas where existing development includes flat-roofed, row-house style structures, or on some portions of a building. Roof forms should be designed to read as a functional roof over the building, not as a decorative feature added to the facade.

- **Vary the façade line with setbacks and projections**: New development should incorporate pronounced changes in the wall planes and building mass to mirror the pattern of individual facades in a village streetscape. For every 50 feet of façade length, at least 10 feet of projection or setback should be included. Though the façade changes can be split into several components, changes in the façade line of 10 feet or more are most likely to read as distinct areas and reduce the visual impact of a larger building mass.

  A varied rhythm of elements, rather than a strict repetition of the same feature, is most effective for breaking down the building mass into smaller components and

providing visual interest to a design. Adjacent wall sections should be varied in length, setback, and height.

Vary the facade line with changes in wall length, setback, and height

- **Vary the wall height**: Provide changes in the building wall height to reduce the overall bulk of the structure and to increase variety along the facades. Portions of the building above 20 feet in height should be roof forms unless the established development pattern in the area includes higher building walls. If a third floor is created, it should be set back or within a roof form to maintain a traditional scale to the building. Designing a second story for a portion of the building is an effective way of varying both the building design and the wall height consistent with traditional development patterns in the region.

- **Bring down the building edges**: Bring the edges of the building down with smaller attached masses such as porches, entrances, or lower additions. The use of arcades (a series of arches supported by columns) that are not physically attached to the building but are stepped forward and essentially act as a frontage building can be particularly effective in breaking up the apparent massing of a large building.

  While visually identifying the entrance of a building is essential to any good design, the mass of the entry should generally be subordinate to the primary building mass. For example, the ridge of an entry should be at or below the primary roof height. The design should provide a visual distinction between primary and secondary entrances, which also helps to incorporate asymmetry into the building facade.

Bring down a building's edges with lower roof forms adjacent to the street.

- **Provide transition areas between commercial and residential developments**: Buildings should step down in scale and size where commercial developments abut residential neighborhoods to avoid jarring transitions in street and neighborhood character.

FOR PROJECTS IN NATURAL AREAS AND RURAL DEVELOPMENT AREAS

- **Limit development footprints**: Development should be avoided in Natural Areas and Rural Development Areas where environmental resources and open landscapes are prominent characteristics. To preserve the open landscape character, wooded nature, and sparse development pattern of these areas, only small scale and clustered developments are appropriate. Building masses should generally not exceed a footprint of 6,000 square feet in Natural and Rural Development Areas.

FOR PROJECTS IN SUBURBAN DEVELOPMENT AREAS

- **Create frontage buildings**: Incorporate small frontage buildings to re-establish traditional building scale and relationships to the street. Frontage buildings can also effectively screen larger development and parking areas to the rear. Building masses should generally not exceed a footprint of 15,000 square feet in Suburban Development Areas without screening from smaller frontage buildings.

- **Reinforce the building setback line**: In areas where existing buildings are set well back from the street and large parking areas are in front, use low walls and dense planting areas to continue the traditional building setback along the street edge.

FOR PROJECTS IN HISTORIC AREAS, MARITIME AREAS, AND COMMUNITY ACTIVITY CENTERS

- **Mirror existing character**: These areas have a distinctive and established character that new development must conform to. Traditionally, buildings in these areas present a pedestrian-scaled facade of one or two stories, with floors over the second story incorporated within a traditional roof form. Village streetscapes have a consistent range of facade lengths and spacing between buildings. This variation should be mirrored in new development by incorporating recesses or projections in the building footprint to mimic the length of traditional building facades. The form and scale of the buildings should be consistent with their surroundings, continuing existing character and streetscape patterns, and should incorporate pedestrian-scaled amenities (such as porches and stoops) and doors and windows on all street-facing elevations. Building masses should generally not exceed a footprint of 6,000 square feet in Historic or Maritime Areas and should generally not exceed a footprint of 15,000 square feet in Community Activity Centers.

- **Avoid long building facades**: For long front facades, vary the setback, height, and roof form of the building within the range provided by existing buildings to continue the established rhythm of facades on the street. In most cases, long facades should be avoided, extending no more than 50 feet without a change in the wall plane. In cases where it is difficult to fit a large building into existing patterns, use smaller frontage buildings to screen large buildings in the rear.

FOR PROJECTS IN INDUSTRIAL ACTIVITY CENTERS AND MILITARY AND TRANSPORTATION AREAS

- Flexibility in the scale of individual buildings is allowed in these areas as long as there is limited visibility of the development from areas outside these Placetypes.

Use regionally appropriate forms and materials

The Cape has always been a region of vernacular architecture – architecture which reveals an area's unique local traditions and characteristics. Cape Cod's earliest architecture took the form of Native Wampanoag wetus built of bent wood poles and

bark coverings. Early colonial forms were simple wood structures based on English styles and oriented toward the region's agricultural focus. By the 18th century, a new form had evolved to meet the early settlers' needs and protect them from the harsh environment. This form has become known as the "Cape Cod House" and its simplicity, its gable roofs, and weathered shingle or clapboard exterior define the basis of vernacular architecture in this region.

The growth of maritime industries in the early 19th century introduced architectural diversity to the Cape. The region's new wealth was reflected in larger homes designed in Greek Revival and other Neoclassical styles and in the expansion and alteration of many existing buildings. Though the new structures were generally larger, they reinforced the local building traditions by maintaining the simplicity of the earlier forms and continuing the use of local materials. The late 19th and early 20th century saw construction of a variety of Victorian styles, built primarily to accommodate Cape Cod's growth as a resort area. Although these structures incorporated new forms, their general scale and wooden construction were compatible with the region's traditions. Throughout the Cape, small-shingled structures continued to be built in simple forms reminiscent of earlier styles.

FOR ALL PROJECTS

- **Complement surrounding architecture in areas with distinctive architectural styles**: Use similar architectural scale, massing, and materials to relate new buildings to their surroundings. Reflect the predominant rhythm of the existing buildings in new construction. When developing in areas without distinctive architecture, new buildings should be designed to complement the region's traditional vernacular styles. Modern elements may be included but should reference regional traditions in either form or materials.

- **Use pitched roofs**: Roofs play a major role in a building's character because they are a dominant visual element. Roof types such as gable, shed, gambrel, and hip are all seen on the Cape, although gable and shed roofs are most common. The pitch of gabled roofs generally is not more than 12 inches in height for 12 inches in length or less than 7 inches in height for 12 inches in length. When pitched roofs are used, sub-masses should be attached to the main mass at right angles, with either parallel roof lines or intersecting cross gables.

- **Use traditional building materials**: One distinctive feature of the region is the preponderance of naturally weathered wood on building exteriors. The Cape's traditional building materials are wood shingle and wood clapboard, though brick and stone were also used. In prominent areas, use high quality, traditional materials that weather naturally on the exterior of the building to reflect regional building traditions. Non-traditional materials may be used if they accomplish the overall goal of adding interest and depth to the facade. In areas that should receive less attention, such as service areas and unbroken expanses of wall, use less-formal materials and simpler detailing to make those parts of the façade recede into the background. High-intensity, reflective, and metallic colors and materials are strongly discouraged. Glass facades or large expanses of glass should generally be limited to non-historic areas, but may be appropriate if they help meet energy-efficiency goals or respond to local modern architecture traditions. If large glass areas are proposed, applicants should incorporate muntins (grilles) or other features such as low-reflectivity glass, glass fritting or frosting, or exterior window screens to limit bird collisions (See also WPH5).

- **Avoid false fronts**: Raised parapets and false-fronted gable ends are strongly discouraged and should be avoided. Non-functioning dormer windows, cupolas, and similar details are also strongly discouraged as they do not serve to break down the building mass, but instead give the impression of unrealistic appendages that detract from, rather than improve, the design.

- **Conceal heating, ventilation, air conditioning (HVAC) and other mechanical equipment**: Place roof mounted equipment behind sloped roofs, parapets, or in the central portion of flat roofs beyond site lines as seen from ground level. Conceal flues and vents in chimneys or cupolas. Screen other utility equipment, loading docks and service areas with vegetation, walls and fences.

FOR PROJECTS IN HISTORIC AREAS AND COMMUNITY ACTIVITY CENTERS

- **Be sensitive to forms in historic areas**: Historic Areas are the most sensitive to change and require careful design to avoid negative impacts to significant structures and landscapes. When adding to or altering existing historic structures, maintain the quality of materials and workmanship found in the original structure. If a comparable quality of natural materials is not available, synthetic surface

materials may be considered as long as they are similar in appearance and durability. For more details, refer to the Cultural Heritage technical bulletin.

FOR PROJECTS IN INDUSTRIAL ACTIVITY CENTERS AND MILITARY AND TRANSPORTATION AREAS

These areas are typically less visible and not adjacent to highly visually sensitive areas, so have more flexibility in terms of design and layout. With large building facades, the design should take a cue from the surrounding traditional forms. Vary the detailing, materials, and colors in adjacent sub-masses to resemble the traditional variety found in the region's village centers.

Industrial and warehouse buildings are typically designed to create large volume spaces with open floor plans to accommodate their manufacturing, assembly, and storage functions and are generally not designed with pedestrian use in mind. Consequently, industrial and warehouse buildings are typically large, have little or no architectural detail, and are built at a scale that is in sharp contrast to the regional development forms of the Cape. Screening and appropriate siting are the best solutions for fitting them into the Cape landscape.

- **Screen buildings with wide landscape buffers**: Establish a wide landscaped buffer between the street and the building by retaining existing wooded areas and supplementing with a variety of evergreen and deciduous trees and shrubs as appropriate to the site and design a meandering entrance drive to limit views into the site. In cases where a site does not have an existing wooded buffer, provide a landscaped buffer that consists of a mix of evergreen and deciduous trees and shrubs that provide adequate year-round screening.

- **Design a portion of the building with traditional form and materials**: Design a small portion of the facility, such as the office or a small retail/showcase area, using traditional architectural forms and materials. Locate this portion of the facility in the most-visible portion of the site, where it can function as a frontage building that provides a more-traditional facade to the public and partially screens other parts of the facility from view. Alternatively, combine the warehouse with other uses and shield the warehouse behind the other structures on the site. Using traditional wood siding on a visible façade can help it blend more easily into the landscape.

Locate parking where it does not adversely impact visual character of the area

Parking is a significant part of any development. To preserve the traditional character of the region and to promote pedestrian-friendly development, parking should be located to the side or rear of a development so that it does not have a strong impact on the character of the streetscape. Building facades and landscaped areas should always be the prominent visual elements. If frontage buildings are used, parking can be located behind them but in front of rear structures. Landscape berms and deep landscape buffers (both along the street and within large lots) can be used to lessen the visibility of existing parking lots, but no new parking should be placed in front where it is visible from the street. If berms are needed to screen development, they may need to be designed in concert with areas of low topography to capture stormwater runoff. Most sensitive are historic and rural/natural areas but preserving character in Community Activity Centers is key to their success.

FOR ALL PROJECTS

- **Locate parking to the side or rear of development**: Parking should be located further back on a lot than any adjacent buildings. Parking located in front of buildings and next to the street is inconsistent with the region's traditional patterns. It diminishes the sense of enclosure of the roadway and is not compatible with pedestrian activity.

- **Screen parking from view**: Locate new parking lots behind or to the side of buildings to effectively screen them and maintain the character of the streetscape. Parking lots may also be screened from the street by the use of a low wall, fence, hedge, or landscaping. Provide view corridors, informational signage, and walkways to provide visibility and access to parking areas.

Locate parking lots behind effective landscape buffers to screen them from view.

- **Design smaller parking lots with more landscaping**: Design smaller parking lots separated by landscaping rather than constructing a single large lot. Use large landscaped islands, at least 10-12 feet wide with trees planted 25-40 feet apart, depending on the tree species selected. Trees should generally be a minimum of 3 inches in diameter when planted. Landscaped islands should comprise 20% of the parking field.

FOR PROJECTS IN NATURAL AREAS AND RURAL DEVELOPMENT AREAS

- **Limit new parking lots**: Use existing lots and shared parking whenever possible. Many land uses require parking at different times of the day and different days of the week, making it convenient to share parking and minimize construction of new parking areas. Use alternative surface materials like gravel or shell or others to blend in with their surroundings.

FOR PROJECTS IN HISTORIC AREAS, MARITIME AREAS, AND COMMUNITY ACTIVITY CENTERS

- **Use existing on-street parking and shared parking lots**: In these areas it's most important to keep parking secondary and not a prominent element of the streetscape. Use existing on-street parking and parking lots that can be shared in village centers and developed areas. Churches, offices, restaurants, and other uses that operate at different times may be willing to enter into agreements to share parking areas, reducing costs as well as the amount of land devoted to impervious parking.

FOR PROJECTS IN SUBURBAN DEVELOPMENT AREAS

- **Remove existing parking from front yard areas**: Where parking exists in front yard areas, reduce the amount of parking provided or relocate it to the side or rear of the lot. Replace those areas with improved landscaping.

- **Seek shared parking between adjacent uses**: Where appropriate, seek opportunities to reduce the amount of parking provided on-site by sharing parking with adjacent uses, particularly in commercial- or industrial-use Suburban Development Areas.

- **Provide for reserve parking on-site to reduce impervious surfaces**: Design overflow parking to be retained in a natural state or use pervious or permeable pavers to reduce the amount of impervious surface in these areas.

Provide appropriate landscaping and pedestrian amenities

Consideration of appropriate landscaping and buffering for development is an integral part of contextual design on Cape Cod. Landscaping can be used to screen parts of development and to enhance its relationship to the site. The development's location and the character of the surrounding landscape context should guide the development of a landscape plan for a project site. While natural vegetation defines the character of some Placetypes, others are more developed and require a different landscape treatment such as street tree planting or pocket parks. Development should implement a landscape plan that addresses the functional aspects of landscaping, such as stormwater treatment, erosion prevention, screening and buffering, and provision for shade and energy conservation. Retaining or restoring visual access to natural resources is also an important component of the region's historic pattern of development identified in the Cape Cod Placetypes.

FOR ALL PROJECTS

- **Preserve the natural landscape**: Minimize removal of existing vegetation. Preserve massings of plants in their characteristic natural associations. Maintain forest floor conditions and as many mature trees on site as possible and design the project around existing vegetation so that the existing landscape provides a setting for the project. Transplant and re-use on-site vegetation where feasible.

- **Restore natural edge conditions**: Blend the development into the existing landscape. Species characteristic of the region require less maintenance, provide an appropriate habitat for local wildlife, and integrate the new development more successfully into the existing landscape. Existing wooded areas adjacent to the site may be used as reference in determining appropriate species for new buffer planting.

- **Use a variety of species to assemble new landscaping masses**: Create visual depth in plant massings by layering plants of various textures, sizes, and colors. Include flowering or fruiting species for color, interest, and wildlife habitat where appropriate. Layered plantings soften edges and corners and reduce the scale of

buildings in the landscape. Masses of trees and vegetation near buildings reduce the perceived scale of buildings and set them into the landscape. Trees should generally be a minimum of 3 inches in diameter at the time of planting. Consider plant massing along with architectural massing during the design process. Balance the mass, proportion, and rhythm of landscape and building elements.

- **Create pedestrian-oriented landscape areas**: Create landscaped areas adjacent to the building to add variety and depth to a large building facade. Arbors or pergolas can be combined with landscaping to effectively break up a large flat facade, adding different materials, depth, and vegetation. Within large projections or setbacks in the facade, incorporate landscaped areas to provide relief and provide interest while also softening the building exterior and mass.

- **Use plants that are characteristic of the region**: Use plant materials that are predominantly native species and suitable to the site. Incorporate pollinator species and other species that provide nesting, food, and cover for wildlife. Provide diversity in plant material selection and select species that minimize use of irrigation, pesticides, and fertilizer. Further information about recommended plant species can be found on the Cape Cod Commission website.

- **Minimize lawn area**: Provide alternatives to lawn area including native grasses and forbs to reduce mowing and fertilizer application. Where lawn is necessary, favor fescues and other drought-tolerant species.

- **Provide pedestrian amenities within the development site**: Incorporate benches, bike racks, and trash receptacles within the development site as appropriate to the use and scale of the project. Pedestrian walkways should be provided within parking areas to allow for safe pedestrian travel, with crosswalk pavement highlighted either by a change in the pavement texture or color so that pedestrian circulation is clearly defined

FOR PROJECTS IN NATURAL AREAS AND RURAL DEVELOPMENT AREAS

- **Use low-lying plantings to preserve views of the horizon**: Especially along the coastline, make use of mat-forming plants or low shrub massings and/or native grasses and forbs that are wind-and salt-tolerant. In wooded areas, preserve existing vegetation.

- **Use substantial landscape buffers to screen new development**: The predominant woodlands found on Cape Cod consist of oak and pitch pine, with a low deciduous understory. These woodlands tend to lack lower branching, and pitch pines, in particular, do not provide effective screening due to their irregular form. This type of natural buffer is an ineffective visual barrier for a proposed development unless it is of substantial depth. Therefore, natural, undisturbed vegetated buffers should be supplemented by additional plantings when necessary to adequately screen development.

- **Preserve the feeling of enclosure**: Wooded roadways provide enclosure through overhead tree canopy. Retain existing wooded road edges and retain a buffer of natural vegetation between new development and the road edge where possible to preserve the character of scenic wooded roadways. When replanting along the road edge, leave an appropriate distance between the edge of the pavement and any new trees.

- **Provide footpaths along roadways**: Where appropriate, provide footpaths along roadways where they enhance compatible access to natural, scenic, and cultural resources and do not adversely impact these resources.

FOR PROJECTS IN SUBURBAN DEVELOPMENT AREAS

- **Improve landscaping and buffering of development**: Improve the appearance and function of Suburban Development Areas by providing adequate buffers and/or berms where appropriate between the street and development to screen parking and shield loading areas. If berms are used to screen development, they may need to be combined with low landscaped areas to address stormwater on site. Substantial buffers should be provided for side and rear property boundaries where commercial development abuts residential properties.

- **Provide pedestrian amenities:** Provide pedestrian amenities within the site including tables, seating, bus shelters, trash receptacles, bike racks, drinking fountains, shelters, and public restrooms where appropriate. Use plantings and public art to enhance these outdoor spaces.

FOR PROJECTS IN HISTORIC AREAS, MARITIME AREAS, AND COMMUNITY ACTIVITY CENTERS

- **Provide sidewalks along roadways, consistent with the character of the area**: While hard curbs may be appropriate in village/activity centers, grass strip and less formal designs are appropriate in other areas. Sidewalks should be accessible when conditions allow.

- **Enhance the streetscape with landscaping**: Provide street trees to define the street edge, provide shade, and contribute to a comforting sense of enclosure. Where appropriate, establish planting strips, road islands and small parks within the public right-of-way, especially where it can make pedestrian crossings more comfortable and safe.

- **Incorporate pedestrian amenities in Community Activity Centers**: Provide public seating, pocket parks, outdoor commercial seating and other amenities along the streetscape to encourage greater activity in front of the building.

- **Use building setbacks for greenspace/hardscape**: Use courtyard areas or setback areas in front and between buildings to accommodate a pocket park, pedestrian plaza, or alleyway to parking behind buildings if appropriate. These areas provide relief, soften the street edge, and provide an opportunity for gathering and interaction that contributes to the vitality of centers.

FOR PROJECTS IN INDUSTRIAL ACTIVITY CENTERS AND MILITARY AND TRANSPORTATION AREAS

- **Provide substantial buffers**: Natural, undisturbed vegetated buffers should be provided by development, particularly in cases where the building form is non-traditional, such as industrial and warehouse buildings.

- **Provide open space adjacent to residential areas**: Where Industrial Activity Centers and/or Military and Transportation Areas are adjacent to residential uses, open space in addition to vegetated buffers should serve to separate incompatible uses.

Ensure lighting protects dark skies and signage fits with community character

Lighting and signage can add to the character of an area or can become a significant visual distraction. Lighting should be kept to a minimum safe level and should not spill onto adjacent lots or up into the sky. The appropriateness of outdoor lighting might also relate to the use for which the lighting is proposed, e.g., outdoor lighting proposed for a hospital may require special considerations for public safety, emergency, and security not generally applicable to other uses.

FOR ALL PROJECTS

- **Design outdoor lighting at moderate levels**: Provide a uniform distribution of light without compromising safety and security. Areas of high pedestrian and vehicle use should maintain a minimum footcandle of 1.0, measured four feet above the ground surface at the point of least illumination, and a maximum footcandle of 7.0. measured four feet above the ground surface directly beneath the light source.

- **Provide total cutoff of light at property lines**: Light should not spill from a development onto adjacent properties. Parking areas should have light fixtures that have a total cutoff of all light at less than 90 degrees and a beam cutoff of less than 75 degrees. Attached building or wall pack lighting should be screened by the building's architectural features or contain a 45-degree cutoff shield.

- **Select light poles that are in scale with proposed or surrounding buildings**: The maximum light fixture height for properties that are visible from regional roadways, abut residential areas or regional vistas, should be 20 feet. Properties that do not abut residential areas and/or have no regional views may have a maximum light pole height of 25 feet. For pedestrian walkways and plazas, consider using lights in bollards (3 to 4-foot high posts) where appropriate.

- **Lighting should not conflict with shade trees within landscaped islands**: Select lower mounting heights, below the canopy of trees, rather than high mounted fixtures which may create shadows or dark spots. Spacing of light poles in parking areas should be staggered rather than aligned, to maintain a uniform distribution of light. In all cases, light poles should be located within landscaped islands for safety and aesthetic reasons.

- **No internally illuminated signs**: Internally illuminated or flashing signs are not appropriate on Cape Cod, though channel-lit letters may be appropriate in non-historic areas. For externally illuminated signs, lighting should be aimed downward to avoid impacts on the night sky.
- **Limit height of signage**: Building signs should be located either flush or perpendicular to the building wall. Do not place signs on roofs or above eaves and parapets. If site signs are used, they should be kept as low as possible without impacting safe sight distance at vehicle entrances.
- **Use the smallest size and least number of signs**: A small, simple, well-located sign is generally more effective than an improperly located large sign with excessive information. Sign materials, style and shape should be compatible with surrounding building materials, colors and textures. Sign size and lighting should be modest to keep the focus on the surrounding traditional architecture and other cultural features.

DETAILED DISCUSSION OF METHODS FOR MEETING OBJECTIVE CD2

Objective CD2 *– Minimize the amount of newly disturbed land and impervious surfaces*

The natural resources and open spaces of the region are key to maintaining the culture and character of Cape Cod, as well as its economy. As development replaces the region's natural areas and forest cover, both natural functions and regional character are degraded. To preserve the Cape's distinctive character and minimize impacts to natural processes as the region continues to grow, new development must follow more compact land use patterns and use land more efficiently.

Cape Cod's traditional development patterns are defined by compact land uses with buildings in more densely developed centers or villages, surrounded by open, natural, and less developed lands. However, much modern development in the region follows a more spread out development pattern that requires large swaths of impervious surface and relies on automobiles as a primary means of transportation, necessitating large and often excessive paved parking areas and roadways. More sustainable design builds in tighter patterns and reuses existing buildings.

These large areas of impervious surface not only fragment the natural habitat and resources of the land, but also negatively impact water quality due to increasing runoff while decreasing the capacity of natural systems to recharge and filter stormwater. Reducing the natural and vegetated areas also diminishes the ability of an area to absorb floodwaters and replacing these areas with pavement or dark roofs can lead to increased heat retention, necessitating greater use of air-conditioning and energy. Minimizing the amount of newly disturbed land and impervious surfaces will help maintain and restore the natural areas of the region and the vital functions they serve, while also reinforcing the unique characteristics of the different Placetypes found throughout Cape Cod.

Reuse and redevelop existing structures and sites

Reuse of existing developed sites takes advantage of existing infrastructure, minimizes the amount of newly disturbed land and impervious surfaces, and reinforces regional development patterns. Reuse also avoids unnecessary new construction, conserves energy, and maintains those buildings that are considered architecturally and historically valuable. Existing buildings hold 'embodied energy' from the effort required

to harvest their building materials, process, and construct them. Reusing existing buildings reduces construction and demolition waste, saves energy by decreasing extraction and processing of raw materials, and reduces air pollution from transporting materials.

Reusing existing buildings also supports the necessary broad spectrum of housing types including affordable housing and a viable mix of uses within an expanding community. Given recent growth on Cape Cod, it is essential to preserve and continue the traditional pattern of adaptive reuse if the Cape is to retain its special character. This housing diversity facilitates growth while preserving community character and a sense of place.

Redevelopment can be an important component of new retail and office developments, improving the viability and character of an existing property through rehabilitated facades, additions, frontage buildings, and enhanced landscaping. It can also provide a good opportunity to encourage mixed-use development in locations where it does not currently exist.

FOR ALL PROJECTS

- **Reuse existing buildings**: To avoid unnecessary new construction and to conserve energy, new uses should be found for existing structures, particularly if they have architectural or cultural significance. Reusing buildings provides the potential for increased economic benefit while limiting new development impacts on natural resources.

- **Reuse developed sites**: In addition to reusing existing buildings, existing developed sites should be redeveloped to avoid newly disturbed lands and impervious surfaces. Redevelopment of these sites may involve partial or complete demolition of buildings (provided they are not culturally significant) and new construction in previously developed areas.

- **Infill development**: Constructing new buildings or additions within areas that are already largely or densely developed is another way of adding development consistent with regional traditions. Infill development in Historic and Maritime Placetypes must be carefully designed to be consistent with existing patterns by adding structures where there are breaks in the streetscape pattern or where there

is available land to the rear of a site. This type of infill development can facilitate efficient use of existing infrastructure.

FOR PROJECTS IN SUBURBAN DEVELOPMENT AREAS

- **Encourage infill construction in areas of existing strip development**: Along the strip, new buildings should be constructed along the road frontage in order to define the roadway edge. Developing buildings along the road frontage will also screen large existing parking areas and help to make the area more pedestrian friendly.

FOR PROJECTS IN HISTORIC AREAS

- **Reuse historic buildings**: Older structures often exhibit architectural styles and a level of craftsmanship that is historically valuable and often too expensive to replicate today. They also represent significant periods and events in a community's history which should not be lost to future generations. New users of historic buildings should limit the alterations they make to historic exteriors in order to avoid losing resources that are important to the community. Refer to the Cultural Heritage Technical Bulletin for guidance and methods to reuse historic buildings.

Cluster development

Cluster development is a form of development that uses smaller lots, and reduced frontage and lot setbacks to focus development on the most appropriate portions of a site while preserving common open space on the more sensitive portions of a site. By concentrating development on one portion of a site, larger and more contiguous undisturbed or undeveloped areas or open spaces may be preserved. Frequently, cluster development permits a reduction in lot area requirements, frontage, and setbacks, allowing reduced construction costs for shorter roadways and other infrastructure. Permanently protected open space is often required as part of the development design and serves as an amenity for the immediate neighborhood and for the larger community.

FOR ALL PROJECTS

- **Cluster development on a portion of the site**: Rather than distributing development uniformly across a site, cluster development close together in areas that are least sensitive in terms of natural resources and where development can

most efficiently share infrastructure and other resources. Lay out buildings, roads, and parking lots after sensitive areas and buffers for these areas have been established. Multistory buildings, mixed use development, and shared parking are features that can help support a smaller development footprint desired in cluster developments.

- **Reduce cut and fill to minimize disturbance to existing topography and vegetation**: Clear only where needed for construction and protect all disturbed areas from erosion and sedimentation. Develop only those areas of the site where the existing slopes are suitable for the proposed use. One benefit of constructing only on suitable slopes is reduced construction costs.

- **Follow existing topography and landscape**: Reflect the form of the land in new road layouts to minimize environmental and visual impact to the landscape. Generally follow existing contours so that roads integrate into the landforms with a minimum of cutting and filling.

FOR PROJECTS IN NATURAL AREAS

- **Reduce development footprints**: New development should be avoided in Natural Areas. Redevelopment or reuse of existing sites within or adjacent to Natural Areas should be clustered to reduce the overall development footprint. Any changes in this Placetype should involve reduced lots, shortened roadways, and protecting additional land from development. This is particularly true for coastal hazard areas where concerns about safety continue to increase and landforms have reduced ability to respond to natural forces.

Minimize total parking spaces to no more than what is required by zoning

In many cases, zoning for commercial uses requires large setbacks from roadways and excessive parking requirements. These requirements make it difficult for development to respect the Cape's traditional development patterns and can lead to unnecessarily large amounts of impervious surface on a site.

FOR ALL PROJECTS

- **Divide up large parking lots**: Divide large parking lots and buildings into smaller components as an alternative to extensive grading and paving. Landscaping can be

used to divide the larger parking areas into discrete smaller parking areas. Landscaped islands should be at least 10-12 feet wide with trees planted 25-40 feet apart, depending on the tree species selected. Trees should generally be a minimum of 3 inches in diameter when planted. Landscaped islands should comprise 20% of the parking field.

- **Design parking lots to accommodate average, not peak, volume**: To reduce the amount of paved area, design parking lots to accommodate average, not peak, volume. The required number of parking spaces should be based on average use over a twelve-month period rather than peak holiday and summer months. Consider sharing parking areas with compatible uses, on-street parking, and town-owned parking lots, as well as school and church parking lots for shuttle service during peak use periods. For new developments, consider reserving an area for additional parking that will be paved in the future if a need is demonstrated, but which will otherwise remain as open space.

- **Use permeable or pervious pavement**: Permeable or pervious construction materials should be used whenever possible. Gridblocks with grass, crushed stone, or shells are possible solutions which can improve the appearance of lightly used or seasonal parking areas while reducing stormwater runoff. This is particularly appropriate in Historic Areas and areas adjacent to Natural Areas.

- **Provide facilities for other modes of transportation**: Provide bicycle racks and storage facilities, and/or bus stops, as appropriate to promote use of modes of transportation other than vehicular and reduce demand for vehicle parking.

Develop multi-story buildings where appropriate

Past development in the region often included multi-story buildings with usable second and third floors. Incorporating multiple stories in new development can reduce both the building footprint and development footprint without reducing the usable square footage.

FOR ALL PROJECTS

- **Add a second or third story to reduce building footprints**: New development should be designed with a usable second or third story, consistent with the region's traditional building forms. Building a second story, rather than placing the entire

floor area on the ground level, can reduce the overall footprint of the proposed use and result in a building that more closely matches the local scale. A second story can also accommodate different uses, such as residential or office space above retail, creating a mixed-use development and allowing for more varied architectural features. Alternatively, a second story may be designed without added floor area, but simply to allow natural light to pass more freely into the interior of the building through an atrium space.

Provide parking under or within buildings or in structures

In some situations, incorporating a parking structure into the design of proposed buildings may be desirable to limit the amount of land area devoted to parking.

FOR ALL PROJECTS

- **Locate parking within or under buildings**: Locating a portion or all of a development's parking within the first floor of a building or underneath it in a parking garage reduces the need for impervious surface in excess of the building footprint.

- **Locate parking in parking structures**: Parking structures can minimize the amount of impervious surface by using multiple stories to create parking areas with a smaller footprint. Multi-story parking structures are preferably located to the rear of a building because it is difficult to design them in ways that are compatible with traditional building forms. If parking structures will be visible from the street or public ways, they should be incorporated into the design of the building, with a similar level of architectural detail.

Use permeable or pervious materials

Whenever possible, permeable or pervious materials should be used instead of impervious materials.

FOR ALL PROJECTS

- **Use porous, permeable, or pervious pavers:** Projects can minimize the amount of impervious surface by using permeable or pervious pavers. These materials may be most appropriate for parking areas or driveways, but could also be utilized for walkways and other paved areas.

Maintain existing vegetation and revegetate disturbed sites

Whenever possible, existing vegetation should be maintained on a site. When vegetation is disturbed, the site should be revegetated with appropriate native species. Refer to the Wildlife and Plant Habitat Technical Bulletin for additional information about appropriate species to plant and about preserving significant plant habitat.

FOR ALL PROJECTS

- **Integrate existing vegetation into the landscape plan**: Integrate existing mature trees and vegetation into the landscape plan. Preserve the function of existing vegetation, such as groves of trees that separate land uses or provide a natural backdrop for development.

DETAILED DISCUSSION OF METHODS FOR MEETING OBJECTIVE CD3

Objective CD3 *– Avoid adverse visual impacts from infrastructure on scenic resources*

Large scale infrastructure projects such as telecommunication towers, solar fields, utility corridors and substations can have significant impacts on the region's community character because of their substantial height and land coverage. It is important to site these projects where they will not dominate sensitive neighborhoods or Placetypes. Smaller scale infrastructure projects, such as road and sidewalk improvements, expansion of public parking areas, and wastewater treatment facilities, are more likely to have impacts on their immediate surroundings. These infrastructure projects should be sited and designed to fit the natural or built character of the surrounding area, considering the scale of buildings as well as nearby cultural resources.

FOR ALL PROJECTS

Site infrastructure away from scenic resources

There are numerous locations or areas on Cape Cod that contain Scenic Resources. Siting infrastructure so that it is not visible from these locations is the preferred method for meeting Objective CD3. Avoid siting infrastructure in Natural Areas, open landscapes in Rural Development Areas, and Historic Areas.

Collocate infrastructure with other existing infrastructure and/or within buildings

Minimize visual impact of infrastructure by collocating or sharing space/poles with other existing infrastructure where possible and/or by locating infrastructure within existing buildings or other structures.

Utilize previously developed and/or impervious areas

For some types of infrastructure such as solar panels and utility infrastructure, the use of previously developed areas such as parking lots or where other infrastructure may already be located is strongly encouraged to reduce natural resource impacts.

Locate infrastructure underground where feasible

Another preferred method for infrastructure unless cultural or natural resources are present is to locate infrastructure underground where it is not visible.

Design and scale infrastructure appropriate to context

Where possible, infrastructure such as roads, sidewalks, traffic signals and other appurtenances as well as wireless facilities, should be designed to be compatible with the corresponding Placetype.

- **Minimize the height of infrastructure**. In visually sensitive areas, minimize the height of infrastructure to the minimum height necessary and/or locate at or below the height of surrounding vegetation.
- **Minimize lighting impacts to surrounding neighborhoods and visually sensitive areas**. Avoid flashing lights, strobe lighting, or brightly illuminated infrastructure unless required by the FAA for safety reasons.
- **Camouflage infrastructure to reduce its visibility**. Camouflage infrastructure through designs that reduce the visibility through techniques such as a reduced profile, color, or by disguising the infrastructure to resemble other structures in the built environment where appropriate. Use colors that mimic the predominant background setting and choose colors or materials that are less reflective.
- **Minimize the silhouette of infrastructure through design**. The outline or profile of infrastructure can be minimized through designs that are sleeker or slimmer.

Screen infrastructure with vegetative buffers, buildings, or other structures

In some cases, dense vegetative buffers may be effective in screening infrastructure from roadways or other public viewpoints. Additional guidance on screening methods is available under Objective CD1.

GENERAL APPLICATION REQUIREMENTS

Written Design Narrative. All applicants should provide a narrative that addresses both the project design and the building design. The narrative should present the Applicant's analysis of the project's Placetype and clearly explain the design concept, alternatives considered, and how the proposed project's siting and building design responds to surrounding context. Include information regarding appropriateness of project siting, building siting, and building materials.

Context Map. All applicants should provide a map identifying resource areas, existing landscape features, development patterns, open space networks, and other important features surrounding the project site.

Context Renderings. All applicants should provide project renderings that illustrate how the proposed development appears in relation to its surroundings. Based on the size, scale, and/or location of the project, Commission staff will identify the extent of the surrounding area that should be included in the renderings.

Required Project Plans

- Site Plans, with functional scale
- Building Elevations, with exterior building materials noted
- Roof Plans
- Landscaping plan and landscape maintenance protocol
- Lighting/Photometric plans and specifications
- Signage Plan and specifications (including signage lighting)

ADDITIONAL APPLICATION REQUIREMENTS FOR INFRASTRUCTURE PROJECTS

Applicants for infrastructure projects may be required to provide the following additional information as part of their DRI application. Based on the size, scale, and/or location of the project, Commission staff will determine if this additional information will be required at a pre-application meeting.

Visual Impact Map. Map of surrounding scenic resources showing areas from which the project may be visible. Based on the size, scale, and/or location of the project, Commission staff will make a determination on the extent of the map. For proposed offshore infrastructure that will affect broad ocean views, please see the Visual Impact Assessment Methodology for Offshore Developments (available from Commission Staff) for detailed methodology on assessing the project's visual impacts.

Visualizations and Simulations. Prepare photo-simulations as determined in the pre-application meeting to describe the anticipated effect of the proposed project on the region's scenic resources. The number of simulations required will depend on the anticipated impact and the sensitivity of the resources. The Visual Impact Assessment (VIA) should include consideration of all parts of the project, including all associated infrastructure both in the ocean or on land. In the event that more than one alternative is being considered, the visual impact of all alternatives should be evaluated by the applicant.

Additional Design Narrative Content. Provide a description of how the infrastructure project has been configured or located and how it avoids or minimizes visual impacts. The narrative should provide details concerning alternative configurations or sites that were evaluated in the design process and the design or mitigation strategies employed to reduce any visual impacts.

REFERENCES

Contextual Design on Cape Cod: Design Guidelines for Large Scale Development. Cape Cod Commission, October 2009. https://www.capecodcommission.org/resource-library/file/?url=/dept/commission/team/Website_Resources/regulatory/DesignManual.pdf

RESOURCES

Design Guidelines for Multifamily Housing. Cape Cod Commission, 2023. https://www.capecodcommission.org/our-work/mf-design-guidelines/

Flood Area Design Guidelines for Cape Cod. Cape Cod Commission, 2023. https://www.capecodcommission.org/our-work/flood-area-design-guidelines/