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Co6. Landscape

Co6.1 Introduction

The strategic object of this plan is to create a resilient landscape through revegetation with native plant material to optimize co-benefits, including water quality.

C06.1.1 Opportunities

This plan focuses on revegetating Tyndall Air Force Base (AFB) with native plant materials that will result in optimized stormwater treatment, continued regulatory compliance, decreased maintenance costs and increased wellness and walkability.

- Apply the *Integrated Natural Resource Management Plan* (INRMP) land management strategies consistently across all developed portions of the base
- Enforce a restricted planting pallet that complies with INRMP and continues to drive out invasive species
- Plant tree species and revegetate with plant materials that are resilient to high winds and will not interfere with buried infrastructure
- Revegetate all land areas south of Mississippi Road, which is a critical zone for mitigating a storm event that includes both heavy rainfall and high surge
- Improve stormwater management and treatment and recover more quickly after storm events

C06.1.2 Authority

The governing authority of Tyndall AFB’s INRMP is the Sikes Act.

C06.1.3 Warranty

Coordination of design and construction with Tyndall AFB staff, agencies, service providers and third-party contractors is critical to the successful implementation of planned improvements. All work is required to be warrantied regarding location and installation of materials in a manner consistent with the intent of the Landscape Master Plan and IFS, and to not create a conflict for installation of adjacent improvements by others. All potential conflicts will be identified by designers/contractors in respective sections of the Compliance Checklist and reviewed by Tyndall AFB Staff.



Maintained and Manicured Landscape Zones



Landscaping along the Multi-Modal Spine

Co6.2 Design Objectives

The landscape design guidelines are grouped according to the following five landscape zones:

- Manicured Zone
- Maintained Zone
- Airfield Zone
- Managed Zone
- Coastal Zone

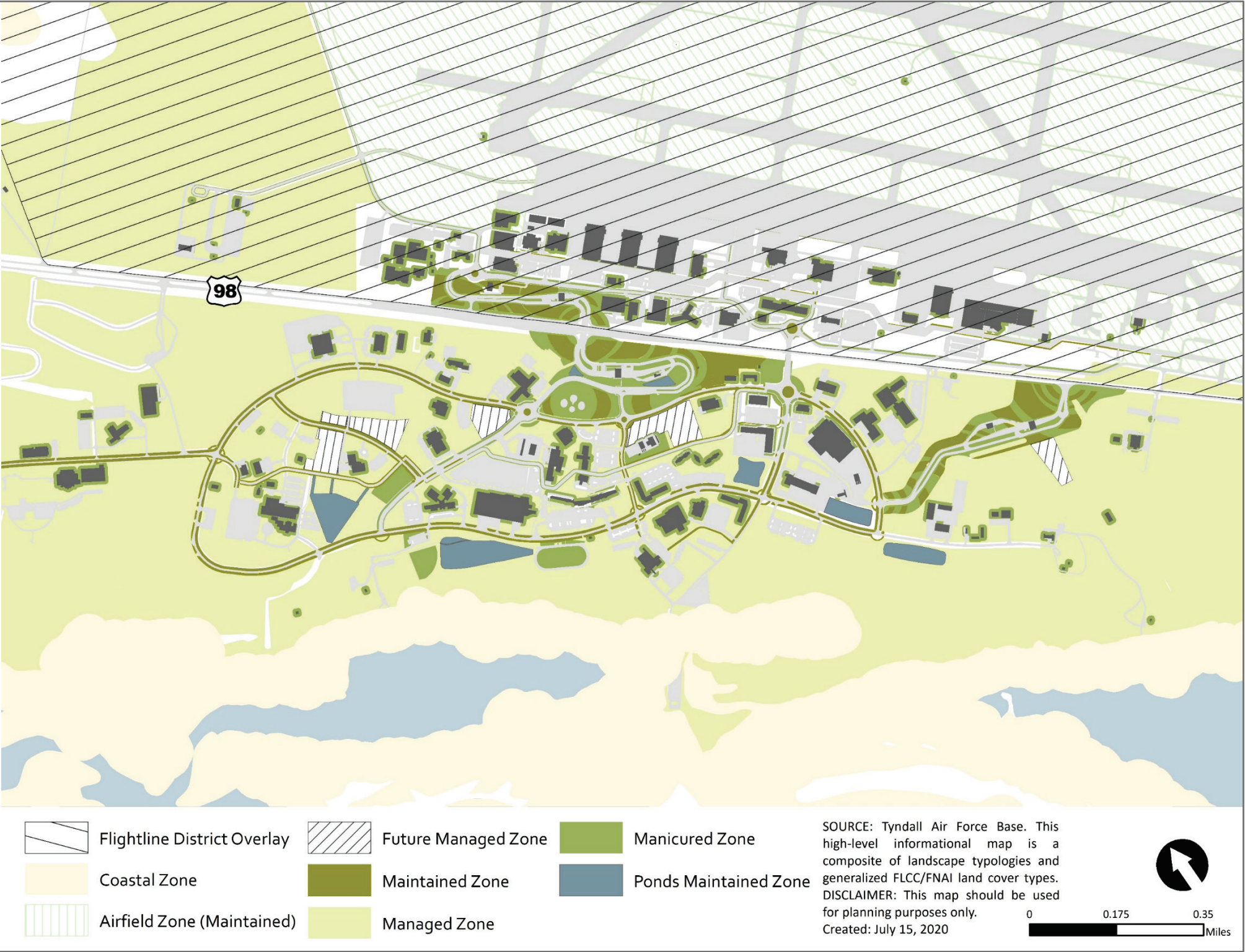
These zone guidelines are intended to be suggestive in nature. Photographs, maps, and illustrations are included to further explain the guidelines and principles expressed throughout this plan. Photographs are shown as examples to depict potential options; they are not final design solutions but provide designers/contractors with a greater understanding of the intended landscape character for Tyndall AFB.

The goals for the landscape character focus on the specifics required for each landscape zone:

- **Design Strategy:** What the landscape will look like in that zone
- **Locations:** Where each zone is located on base
- **Plant Lists:** Typical plant species for use in that zone

These design guidelines are meant to help designers/contractors have a clear vision of not only what the landscape character is within their construction boundaries, but also how all the construction zones interface with each other. They also explain other areas on the installation that will be preserved, improved, or developed outside of the general rebuilding areas. Tyndall AFB Natural Resources will perform revegetation in forest areas. Any area outside of forest areas must be performed by contract. This will result in the establishment of an overall sustainable and resilient natural landscape for the entire base.

Exhibit C06-1. Landscape Management Strategy



Co6.3 Design Approach

C06.3.1 Using Site Analysis to Inform Planting Design

A thorough understanding of a site and its context is key to a successful design and matching plant communities to site conditions. In general, a landscape site analysis considers factors like the site’s context, target audience, soil types, sun and shade conditions, hydrologic zones, existing plant communities, and regulatory constraints.

C06.3.2 Choosing Native, Ecological & Functional Plants

Avoid invasive species at all costs. Species with local habitat and ecological value are encouraged. Biodiversity in landscape designs is critical because monocultures can make a landscaped area vulnerable to stressors such as disease, pests, and climatic extremes.

This section includes abridged plant pallets for areas within the built environment. The Master Plant List, available from Tyndall AFB, provides a comprehensive list of plants allowed on the base.

C06.3.3 Following the Method of Designed Plant Communities

The designed “plant community structure” approach recognizes that plants are overlapping populations that interact and evolve over time. Rather than prescribing blocks of single species, the method creates dense, layered plantings not by spacing plants closer together but by implementing a vertical layering system that includes both design (ornamental) and functional plant layers. The goal of the landscape plan must be a diverse functional layer (groundcover and filler species) supporting a design layer with aesthetic value (structural and seasonal theme species). The Flightline District is an outlier from this approach because of the limited species allowed from the Bird/Wildlife Aircraft Strike Hazard (BASH) regulations.

C06.3.4 Planting Design Components

See **Section C04, Integrated Land Management**, for additional requirements.

Design Layers

- **Seasonal Theme Plants:** Intermediate species that provide seasonal interest. These species should be coordinated with each other to provide year-round seasonal interest in complementary or contrasting tones. This consists of perennials, ornamental grasses, and bulbs. The seasonal theme plants should make up approximately 30-40% of the plant community.
- **Structural / Framework Plants:** Large species that provide visual and functional backbone to the plant community. This consists of trees, shrubs, and large perennials. The structural plants should make up approximately 10% of the plant community.

Functional Layer

- **Groundcover Plants:** Low-to-the-ground, spreading species that function as an earth-covering component. This consists of grasses, sedges, and seed mixes that, in conjunction with the dynamic filler plants, form the green mulch for the plant community and remove the opportunity for the infestation of invasive species. The groundcover plants should make up approximately 30-40% of the plant community.
- **Dynamic Filler Plants:** Low- to intermediate-height species that are used to fill gaps between the other plant species. In addition to providing this function, these species should also add a dynamic textural backdrop to the seasonal theme plants. The dynamic filler plants should make up approximate 10% of the plant community.

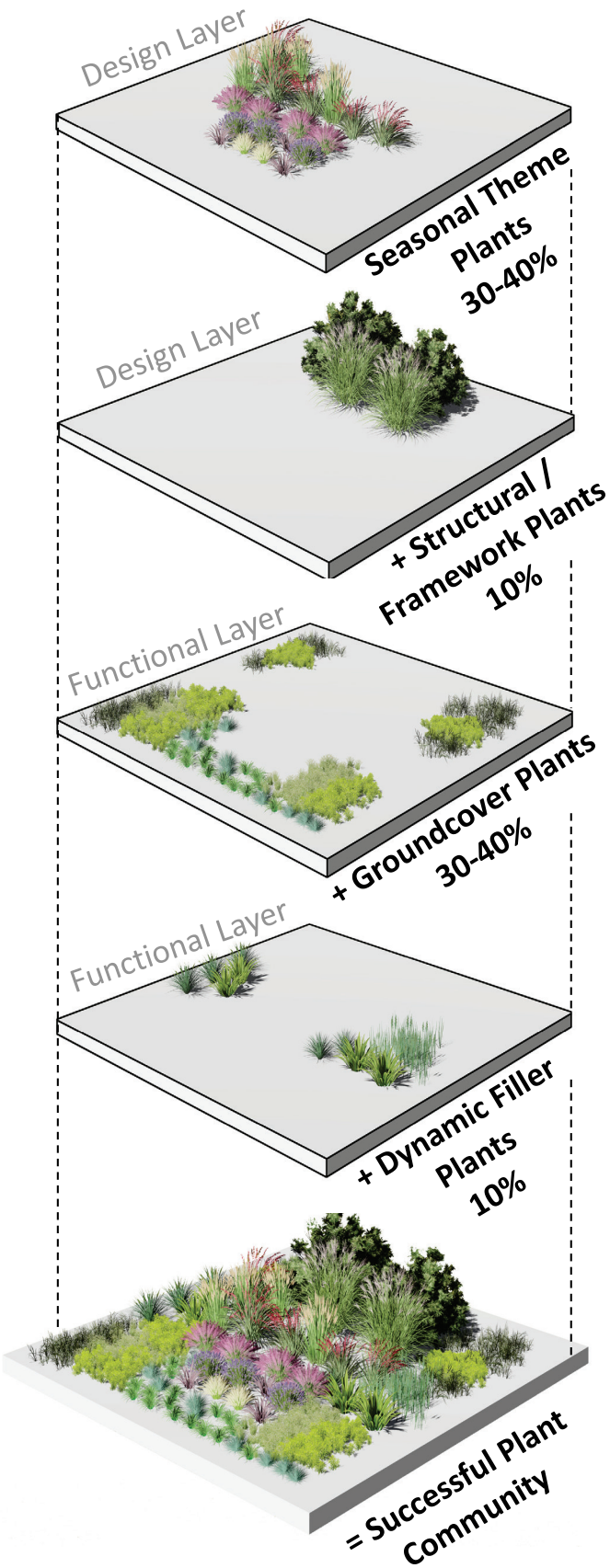
Co6.4 Landscape Typologies & Criteria

C06.4.1 Landscape Zone Criteria (LaC)

The criteria in this section relate to specific design requirements, including IFS requirements, and guidelines for designers/contractors to follow and Tyndall AFB personnel to review. Additional criteria are provided in the other sections of this **Landscape Master Plan** and are not repeated in this section; however, the requirements for landscape must be coordinated with other site elements. The sections that follow serve as worksheets, with supporting guidance and illustrations, for designers/contractors to use among their teams and in coordination with Tyndall AFB. These worksheets should be used to complete the **Compliance Checklist** submittal for each project. Each requirement includes a selection of check boxes to indicate the applicability of that requirement to a specific context, and to demonstrate compliance with the requirements.

Yes No N/A
☒ ☐ ☐ The designer/contractor either selects “Yes” if compliance has been met, “No” if it has not, or “N/A” if the requirement is not applicable to the project.

Exhibit C06-2. Planting Design Components



C06.4.2 Manicured Zone

The Manicured Zone is the most highly maintained landscape on base. It is located between a building's immediate perimeter up to the edge of the Maintained Zone. The Antiterrorism (AT) Zone is a subzone of the Manicured Zone and extends out 20 feet from a building's immediate perimeter, as well as at base access gates and other areas as prescribed for security reasons. The Manicured Zone may extend beyond the AT Zone. Landscape in this zone will have vegetation that meets the AT regulations. Vegetation in the other areas of the Manicured Zone that extend beyond the AT Zone must be drought-resistant and contain native trees for shade and ornamental grasses and native shrubs for color and variety. Different plant lists are used for the Flightline and Support Districts because of their different mission requirements.

Typical Locations

This planting strategy applies to the following locations:

- Within the AT Zone that surrounds a building
- Between the building face and the interconnection with natural landscape of the Maintained Zone

Planting Design Strategy

- Laying out plantings in an informal layout, with smaller formal plantings highlighting building entrances and prominent circulation nodes
- Spacing plants at regular intervals
- Massing plants by species to achieve a maintained aesthetic

AT Zone Plantings

- No grass, groundcovers, or shrubs higher than 6 inches
- All trees must be limbed clear up to 3 feet

Benefits

- Reduces maintenance costs
- Increases resiliency to wind and storm
- Slows down stormwater runoff

Exhibit C06-3. Rendering of a Manicured Zone



Exhibit C06-4. Typical Section of a Manicured Zone



C06.4.2.1 Plantings Within the Manicured Zone

Plant a mix of native trees, shrubs, and grasses in the Manicured Zone based on the approved specifics identified in the Master Plant Palette. A sample plant list shown in Exhibit C06-6. Arrange plantings in a more formal manner with species grouped together to form patterns and use native grasses that can be mowed.



Low groundcover and limbed trees close to building



Mown lawn close to building, native grasses beyond



Mown lawn close to building, native grasses beyond



Mown lawn close to building, native grasses/trees beyond

Exhibit C06-5. Grasses Allowed in the AT Zone

Common Name	Botanical Name
Turfgrasses	
Bermuda grass	<i>Cynodon dactylon</i>
Bahia grass	<i>Paspalum notatum</i>

Exhibit C06-6. Sample Manicured Zone Plant List

Common Name	Botanical Name	Notes
Canopy trees		
Red maple	<i>Acer rubrum</i>	16' ht, min at install / 40' mature ht.
River birch	<i>Betula nigra</i>	16' ht, min at install / single trunk only
Bald cypress	<i>Taxodium distichum</i>	20' ht. min at install
Understory trees		
Dahoon	<i>Ilex cassine</i>	16' ht. min at install / 40' mature ht.
Palms		
Cabbage palm	<i>Sabal palmetto</i>	18-24' ht. min. at install
Grasses		
Elliott's lovegrass	<i>Eragrostis elliottii</i>	Maintain ht. per AT requirements
Purple lovegrass	<i>Eragrostis spectabilis</i>	Maintain ht. per AT requirements
Sedges & rushes		
Thicket sedge	<i>Carex abscondita</i>	Maintain ht. per AT requirements
Prickly bog sedge	<i>Carex atlantica</i>	Maintain ht. per AT requirements
Toad rush	<i>Juncus bufonius</i>	Maintain ht. per AT requirements
Elliott's rush	<i>Juncus elliottii</i>	Maintain ht. per AT requirements
Shore rush	<i>Juncus marginatus</i>	Maintain ht. per AT requirements
Wildflowers		
Lanceleaf tickseed	<i>Coreopsis lanceolata</i>	2" Plug / Seed
Grassleaf coneflower	<i>Rudbeckia graminifolia</i>	2" Plug / Seed
Groundcover		
Turkey tangle fogfruit; capeweed	<i>Phyla nodiflora</i>	2" Plug / Seed
Shoreline seapurslane	<i>Sesuvium portulacastrum</i>	2" Plug / Seed
Legumes		
Rabbitbells	<i>Crotalaria rotundifolia</i>	2" Plug / Seed
Lady lupine	<i>Lupinus villosus</i>	2" Plug / Seed

C06.4.2.2 Building Entrances

Building entrance landscape is within the Manicured Zone typology.

Yes No N/A

- ☐ ☐ ☐
- LaC 1. Place landscape so it frames the building entrance and highlights the front entry.
- ☐ ☐ ☐
- LaC 2. Use enhanced pavement at Group 1 buildings to form a small gathering plaza as part of the entrance.
- ☐ ☐ ☐
- LaC 3. Provide direct connections from the building entrance pedestrian routes to the base Multi-Modal Spine and/or shared-use paths.
- ☐ ☐ ☐
- LaC 4. Use plantings for housing/dormitories that create a safe and welcoming facility entrance.
- ☐ ☐ ☐
- LaC 5. Use plantings with color and interest to frame the entrances to Group 1 facilities and buildings of special importance.



Provide plantings for housing/dormitories that make the facility entrances appear safe and welcoming



Plantings need to be simple and clean and easily maintained at Group 2 and 3 facilities



Provide plantings with color and interest to frame entrance to buildings of special importance in Group 1 facilities, such as Command Center or Visitor Center

C06.4.3 Maintained Zone

The Maintained Zone comprises native open upland prairie landscape. The Maintained Zones reduce the amount of existing area that is open lawn space that needs to be mowed. This zone is meant to look native in character and receive minimal maintenance. Nature-based infrastructure such as vegetated stormwater basins and vegetated swales are included in this zone. This area is part of the INRMP and maintained by the FWC. It is subject to either periodic mowing or burning as part of the INRMP guidelines. Areas such as parking area medians, paths, roadways, swales, and open areas beyond the Manicured Zone vegetated stormwater basins and vegetated swales are not part of the INRMP and are maintained under the direction of the 325 CES Operations Flight Grounds Maintenance.

Typical Locations

This planting strategy applies to:

- Roadway corridors (turf mow strips at the back of sidewalks are excluded)
- Parking area medians
- Building perimeter open areas (beyond the AT Zone)
- Areas where more natural looking planting is desired between buildings

Planting Design Strategy

Plants will be arranged in an organic pattern and spaced at irregular intervals with undefined edges between them. Three planting strategies include:

- Clustering trees along roadways
- Providing open areas of native grass and wildflower mix (with a maximum height of 24 inches)
- Layering a mix of grasses and shrubs

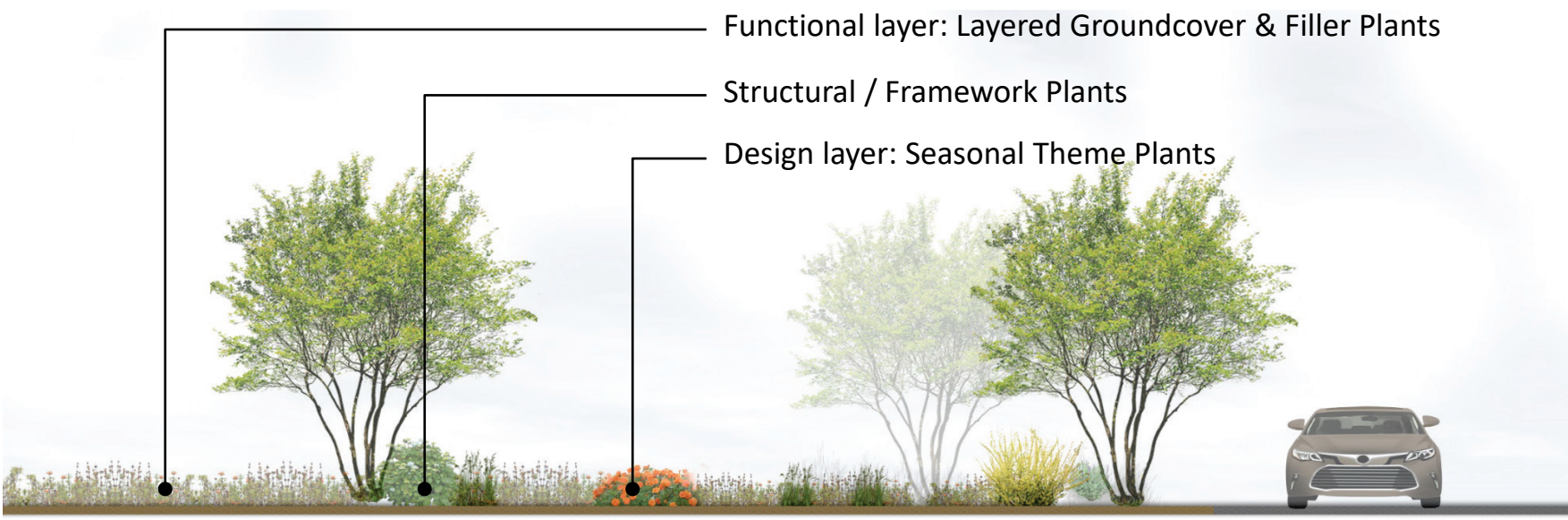
Benefits

- Reduces maintenance costs
- Increases resiliency to wind and storm
- Slows down stormwater runoff

Exhibit C06-7. Rendering of the Maintained Zone



Exhibit C06-8. Typical Section Along Roadways



Example of vegetation in the Maintained Zone

The following are landscape criteria are to applied along Maintained Zones roadway corridors, medians, around building perimeters (excluding AT zones), and other areas where a natural and native aesthetic is desired. Exhibit C06-9 provides an abridged version of the Maintained Zone Plant List. The Master Plant List includes additional approved plants and information.

C06.4.3.1 Parking Area Islands

Yes	No	N/A		
☐	☐	☐	LaC 6.	Plant native shrubs and grasses less than 3 feet tall that can withstand periodic flooding.
☐	☐	☐	LaC 7.	Dip parking area islands to the center so they can collect water through curb cuts or other gaps in the curbing.
☐	☐	☐	LaC 8.	Use deciduous and evergreen mix for seasonal appeal.
☐	☐	☐	LaC 9.	Provide swales with an outlet from the parking area to accommodate overflow.
☐	☐	☐	LaC 10.	Comply with IFS requirements for Landscape Treatments, Site and Surface Parking, and Interior Surface Parking Landscaping Requirements.



Native plantings in parking area islands

C06.4.3.2 Trails, Bikeways & Open Areas

Yes	No	N/A		
☐	☐	☐	LaC 11.	Provide a plant mix of native trees, shrubs, and grasses on both sides off trails.
☐	☐	☐	LaC 12.	Use grass that can be mowed for the first 5 feet on each side of the trail.
☐	☐	☐	LaC 13.	Use a seed mix of various native grasses, wildflowers, and shrubs in large open areas.



Grasses that can be mowed on the first 5 feet of path edges

C06.4.3.3 Roadways

Yes	No	N/A		
☐	☐	☐	LaC 14.	Plant the area between the curb and the sidewalk with large and medium trees and a mix of native grasses and flowers (maximum height of 24 inches).
☐	☐	☐	LaC 15.	Use plants that can withstand flooding in roadway swales.
☐	☐	☐	LaC 16.	Mow once a year to reduce weeds and help the wildflowers reseed.
☐	☐	☐	LaC 17.	Plant trees in a staggered, clustered pattern.
☐	☐	☐	LaC 18.	Plant trees at least 5 feet away from utilities.



Native grasses, wildflowers, and trees in a swale along the road

Exhibit C06-9. Plantings within the Maintained Zone

Plant a mix of native trees, shrubs, wildflowers, ferns, vines and grasses in the Maintained Zone based on the approved specifiers identified in the Master Plant Palette. A sample plant list shown below.

Common Name	Botanical Name	Notes
Canopy trees		
Red maple	<i>Acer rubrum</i>	16' ht, min at install / 40' mature ht.
River birch	<i>Betula nigra</i>	16' ht, min at install / single trunk only
Southern magnolia	<i>Magnolia grandiflora</i>	
Swamp tupelo	<i>Nyssa sylvatica</i> var. <i>biflora</i>	
Turkey oak	<i>Quercus laevis</i>	
Swamp chestnut oak	<i>Quercus michauxii</i>	
Willow oak	<i>Quercus phellos</i>	
Post oak	<i>Quercus stellata</i>	
Southern live oak	<i>Quercus virginiana</i>	
Pond cypress	<i>Taxodium ascendens</i>	
Bald cypress	<i>Taxodium distichum</i>	20 ht. min. at install
Understory trees		
Red buckeye	<i>Aesculus pavia</i>	
Wild olive; devilwood	<i>Cartrema americanum</i>	
Swamp dogwood	<i>Cornus foemina</i>	
American witchhazel	<i>Hamamelis virginiana</i>	
Dahoon	<i>Ilex cassine</i>	16' ht. min at install / 40' mature ht.
Myrtle dahoon	<i>Ilex cassine</i> var. <i>myrtifolia</i>	
American holly	<i>Ilex opaca</i>	
Sweetbay	<i>Magnolia virginiana</i>	
Southern bayberry; wax myrtle	<i>Myrica cerifera</i>	
Palms		
Cabbage palm	<i>Sabal palmetto</i>	18-24’ ht. min. at install

Common Name	Botanical Name
Shrubs	
Bastard false indigo	<i>Amorpha fruticosa</i>
American beautyberry	<i>Callicarpa americana</i>
Virginia willow; virginia sweetspire	<i>Itea virginica</i>
Needle palm	<i>Rhapidophyllum hystrix</i>
Florida flame azalea	<i>Rhododendron austrinum</i>
Swamp azalea	<i>Rhododendron viscosum</i>
Dwarf palmetto	<i>Sabal minor</i>
Saw palmetto	<i>Serenoa repens</i>
Spanish bayonet; aloe yucca	<i>Yucca aloifolia</i>
Adam's needle	<i>Yucca filamentosa</i>
Grasses	
Splitbeard bluestem	<i>Andropogon ternarius</i>
Long leaf threeawn	<i>Aristida palustris</i>
Arrowfeather threeawn	<i>Aristida purpurascens</i>
Wiregrass	<i>Aristida stricta</i>
Longleaf woodoats	<i>Chasmanthium laxum</i> var. <i>sessiliflorum</i>
Hairawn muhly	<i>Muhlenbergia capillaris</i>
Switchgrass	<i>Panicum virgatum</i>
Little bluestem	<i>Schizachyrium scoparium</i>
Tall redtop	<i>Tridens flavus</i>
Sedges & rushes	
Longhair sedge	<i>Carex comosa</i>
Southern waxy sedge	<i>Carex glaucescens</i>
Walter's sedge	<i>Carex striata</i>
Wire sedge	<i>Carex tenax</i>
Leathery rush	<i>Juncus coriaceus</i>
Soft rush	<i>Juncus effusus</i> ssp. <i>Solutus</i>
Bighead rush	<i>Juncus megacephalus</i>
Needle rush	<i>Juncus roemerianus</i>

Common Name	Botanical Name
Wildflowers	
Texas tickseed	<i>Coreopsis linifolia</i>
Georgia tickseed	<i>Coreopsis nudata</i>
Purple coneflower	<i>Echinacea purpurea</i>
Savannah iris	<i>Iris tridentata</i>
Pinkscale gayfeather	<i>Liatris elegans</i>
Slender gayfeather	<i>Liatris gracilis</i>
Black-eyed susan	<i>Rudbeckia hirta</i>
Blue sage	<i>Salvia azurea</i>
Early goldenrod	<i>Solidago juncea</i>
Narrow-leaf ironweed	<i>Vernonia angustifolia</i>
Ferns	
Cinnamon fern	<i>Osmunda cinnamomea</i>
Royal fern	<i>Osmunda regalis</i>
Bracken fern	<i>Pteridium aquilinum</i>
Netted chain fern	<i>Woodwardia areolata</i>
Virginia chain fern	<i>Woodwardia virginica</i>
Vines	
Netleaf leather-flower	<i>Clematis reticulata</i>
Coral honeysuckle	<i>Lonicera sempervirens</i>
Virginia creeper	<i>Parthenocissus quinquefolia</i>

C06.4.4 Airfield Zone

This zone includes the runways in the Flightline District, the natural areas between the runways, and the areas surrounding the runway perimeter extending to the pine forest. The following information has been provided by the Tyndall AFB BASH Team. Any changes or substitutions must be coordinated with the BASH Team.

Planting in this zone consists of native grass that is mown regularly to keep it low and prevent wildlife habitats. Birds, in particular, are hazardous to the aircraft and present a safety concern. Shrubs, groundcovers, and bunchgrasses used in the Airfield Zone must be selected and planted in a manner that prevents crowding and eliminates dense landscape that birds and other wildlife find attractive for nesting.

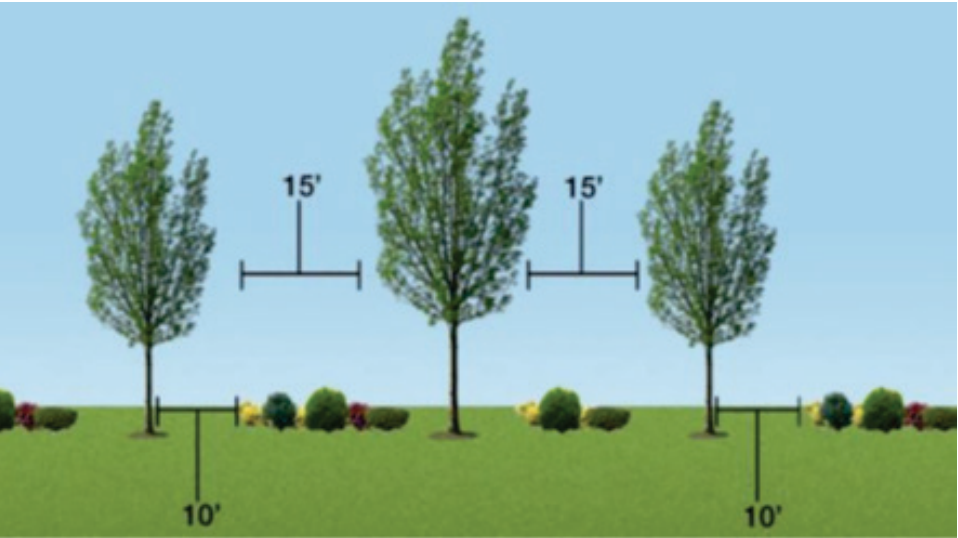
Benefits

- Increases safety and reduces aircraft hazards
- Slows down stormwater runoff
- Reduces habitat for birds and other wildlife



Example of Airfield Zone planting

Exhibit C06-10. Concept of Minimum Landscape Layout, Not Representative of Species or Brush Density



C06.4.4.1 Airfield Zone Planting Design Criteria

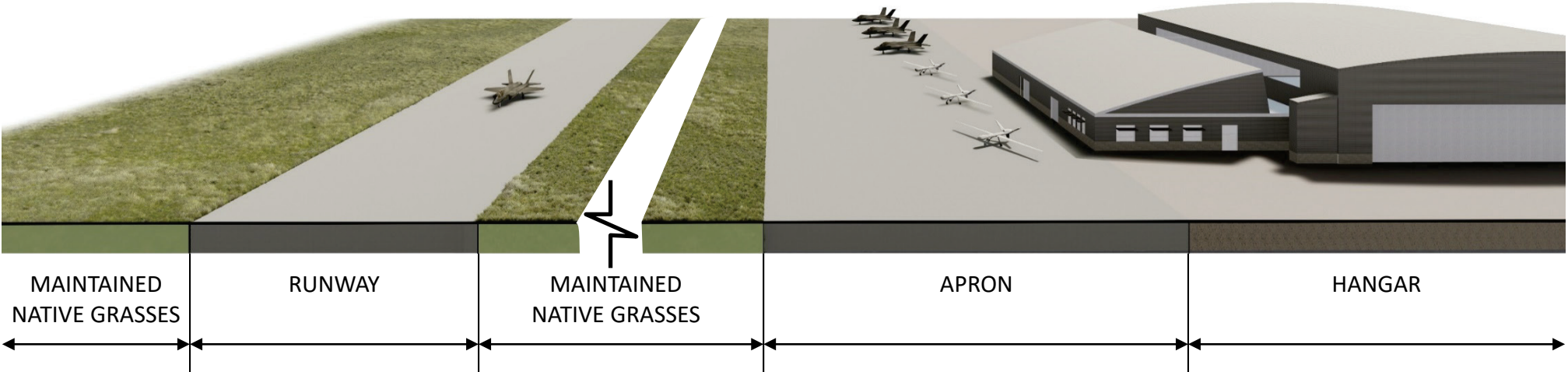
Exhibit C06-12 lists examples of plants and trees approved for use in the Airfield Zone landscape designs.

- | Yes | No | N/A | |
|--------------------------|--------------------------|--------------------------|--|
| ☐ | ☐ | ☐ | LaC 19. Plant only native turf grasses from the approved plant list. Trees and shrubs are not allowed. |
| ☐ | ☐ | ☐ | LaC 20. Verify that all airfield planting is approved by Tyndall AFB. |
| ☐ | ☐ | ☐ | LaC 21. Use shrubs that are a mix of deciduous and coniferous species. |
| ☐ | ☐ | ☐ | LaC 22. Use shrubs that grow at various heights to prevent uniform and continuous habitat cover. |
| ☐ | ☐ | ☐ | LaC 23. Use sterile (non-fruiting) varieties or male varieties of shrubs to prevent seeds and berries from attracting birds and wildlife. |
| ☐ | ☐ | ☐ | LaC 24. Plant shrubs, groundcovers, and bunch grass in groups up to five individuals. Include a maximum of two individual Pinxster azaleas per group of shrubs, groundcovers, and bunch grass. |
| ☐ | ☐ | ☐ | LaC 25. Plant shrubs a minimum of 10 feet from any other group of planting. |
| ☐ | ☐ | ☐ | LaC 26. Maintain all trees in the Flightline in accordance with airfield obstruction standards. |
| ☐ | ☐ | ☐ | LaC 27. Do not plant sycamore trees within 1,250 feet of the nearest runway center line. |

Exhibit C06-12. Airfield Zone - Approved Plants

Common Name	Botanical Name
Canopy trees	
Loblolly bay	Gordonia lasianthus
Pond cypress	Taxodium ascendens
Understory trees	
Florida dogwood	Cornus florida
American witchhazel	Hamamelis virginiana
Shrubs, groundcovers, bunch grasses	
Wind dancer love grass	Erarotis ellioti
Purple love grass	Erarotis spectabilis
Muhly grass	Muhlenbergia capillaris
Pinxster azalea	Rhododendron canescens
Scarlett sage	Salvia coccinea
Coontie	Zamia floridana
Turfgrasses	
Bermuda grass	Cynodon dactylon
Bahia grass	Paspalum notatum

Exhibit C06-11. Typical Section in the Airfield Zone



C06.4.4.2 Airfield Zone Multi-Modal Spine Design Planting Criteria

On the southern side of the Flightline District is the Flightline Multi-Modal Spine. This corridor is within the manicured landscape zone, but because it is within the Flightline District it has specific landscape restrictions that must be followed. This area includes trees and shrubs, but of a species and character that does not attract birds.

Benefits

- Reduces maintenance costs
- Increases resiliency to wind and storm
- Slows down stormwater runoff
- Reduces habitat for birds and other wildlife
- Provides much needed shade for length of walkway/building connector

Yes No N/A

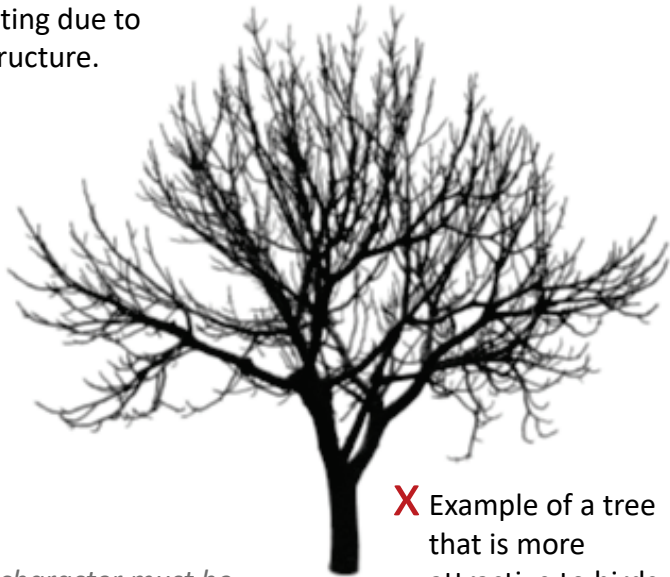
- ☐ ☐ ☐
- LaC 28. Select and plant trees and shrubs in a manner that reduces attractiveness to wildlife.
- ☐ ☐ ☐
- LaC 29. Select tree species that are columnar in shape with vertical branching structures that minimize perching and nesting opportunities for birds. Use sterile (non-fruiting) varieties of trees.
- ☐ ☐ ☐
- LaC 30. Select trees that have varied canopy types and heights at planting and at maturity. Design tree spacing so the crowns have a minimum separation of 15 feet once trees are mature. Install trees so canopy overlap into the clear space is not possible during any season.
- ☐ ☐ ☐
- LaC 31. Plant shrubs a minimum of 10 feet from any trees.
- ☐ ☐ ☐
- LaC 32. Select shrubs that are a mix of deciduous and coniferous species. Use sterile (non-fruiting) or male varieties of shrubs to prevent seeds and berries from attracting birds and wildlife.
- ☐ ☐ ☐
- LaC 33. Verify that all planting is approved by the BASH Team.



✓ Example of a non-fruiting shrub that is minimally attractive to wildlife because of its vertical branching structure and moderate density.



Branching character must be columnar, not spreading



✗ Example of a tree that is more attractive to birds due to its horizontal branching structure.

Exhibit C06-13. Flightline District’s Multi-Modal Spine



✓ Example of an ideal tree / shrub because it has minimal opportunities for perching and nesting due to vertical branching structure.



Example of tree-lined walkway with columnar shaped trees; includes low shrubs, groundcover, and sitting walls and other bench types located along the walk

C06.4.5 Managed Zone

The Managed Zone encompasses all perimeter areas upland of the peninsula coastline, as well as large open areas in between facilities on the base located beyond the Maintained Zone. This zone includes areas of pineland plantations, mesic/wet slash flatwoods, wet prairie, freshwater wetlands, and inland ponds and lakes. This area is primarily controlled by standards set forth in the INRMP.

Planting Design Strategies

- Restoring damage to the base’s forest habitat caused by Hurricane Michael
- Reducing fire hazards
- Restoring natural esthetics destroyed by wind
- Implementing low-intensity frequent fire as a management tool to restore and/or maintain the structure and function of the longleaf pine ecosystem and to reduce the wildfire hazard risk
- Improving habitat for wildlife

Benefits

- Increases resiliency to wind and storm
- Slows down stormwater runoff
- Enhances wildlife habitat

Resources

See **Section B04, Integrated Land Management**, for Restorative and Resilient Base Restoration approach.

C06.4.5.1 Managed Zone Planting Design Criteria

Yes No N/A

☐☐☐

LaC 34. Align planting within the Managed Zone with the INRMP and support the installation’s ecosystem initiatives as a part of a broader integrated resilient environmental infrastructure system.

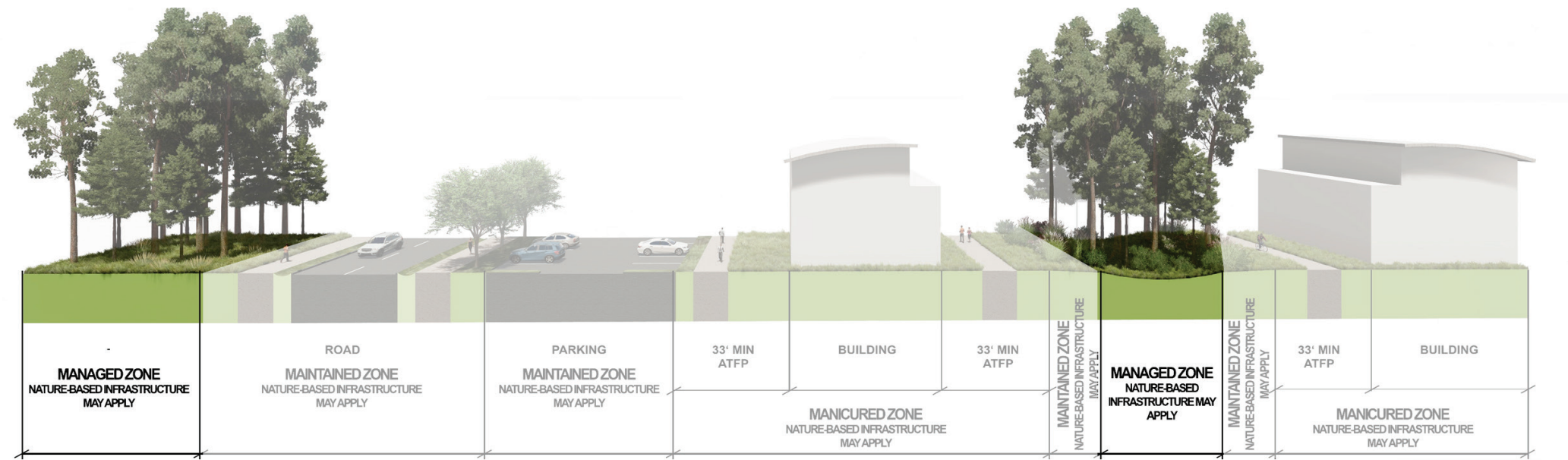


Wetlands



Longleaf Pine Forest

Exhibit C06-14. Managed Zone Areas Between Buildings



C06.4.6 Coastal Zone

The Coastal Zone encompasses all areas from the ocean shoreline back to the second line of defense, which includes sand beaches, coastal dunes, coastal wetlands, salt marshes, estuaries, coastal dune lakes, and coastal upland. The Coastal Zone provides critical natural infrastructure supporting mission readiness, overall resilience of built infrastructure, and a wealth of natural resources. This complex unique coastal ecosystem provides numerous year-round recreational opportunities vital to the health and well-being of Airmen and their families. The preservation, conservation, and enhancement of these critical waterfront ecosystems positively supports the many aspects of the base’s current and future missions through a more resilient natural infrastructure.

Planting Design Strategies

- Arranging plantings in naturalized groupings
- Selecting plant species that support existing coastal zone plant communities
- Limiting impact of construction/installation impact within the environmentally sensitive Coastal Zone

Benefits

- Reduces maintenance costs
- Increases resiliency to wind and storm
- Slows down stormwater runoff
- Enhances wildlife habitat

Resources

See **Section B05, Coastal Zone** for overall Coastal Zone strategies.

C06.4.6.1 Coastal Zone Planting Design Criteria

Yes No N/A

☐ ☐ ☐

LaC 35. Align planting within the Coastal Zone with the INRMP and support the installation’s ecosystem initiatives as a part of a broader integrated resilient environmental infrastructure system.



Examples of Coastal Zone vegetation

Co6.5 Treatments For Specific Areas

C06.5.1 Driveway Landscape Treatments

- Yes No N/A
- ☐ ☐ ☐ LaC 36. Plant large canopy trees along the driveway access between sidewalks and the back of the curb.
- ☐ ☐ ☐ LaC 37. Provide an amenity zone that has a minimum width of 10 feet.
- ☐ ☐ ☐ LaC 38. Plant a single row of trees in amenity zones that are less than 20 feet wide, spaced at 30 feet on center.

- Yes No N/A
- ☐ ☐ ☐ LaC 39. Plant trees in a staggered form and use a mix of large canopy tree and small canopy tree in amenity zones that are equal to or greater than 20 feet wide.
- ☐ ☐ ☐ LaC 40. Use 3-foot horizontal clearance from edge of travel lane and 2-foot horizontal clearance from the edge of sidewalks/shared-use paths.

Exhibit C06-15. Driveway Landscape Treatment

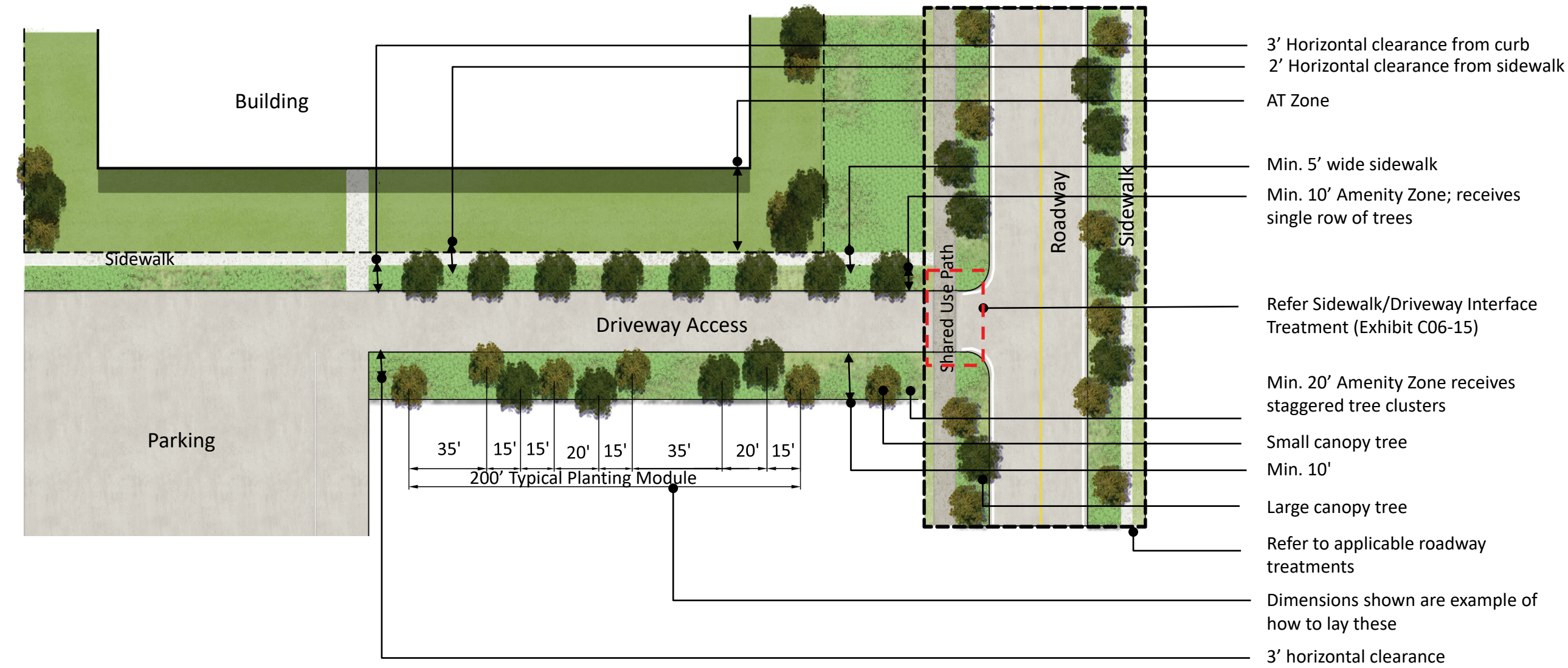


Exhibit C06-16. Sidewalk/Driveway Interface Treatment



C06.5.2 Pedestrian Refuge Islands & Medians

- Yes
- No
- N/A
- ☐
- ☐
- ☐
- LaC 41.
- Use a mix of evergreen and flowering shrubs as ground level planting and canopy trees when the median is 10 feet wide or more. Trees should be spaced at 20-30 feet depending on the species and canopy size. Maintain a minimum 6-foot clear trunk height.
- ☐
- ☐
- ☐
- LaC 42.
- Plant only evergreen groundcover and low shrubs on constricted medians, where the median width is between 5 and 10 feet.
- ☐
- ☐
- ☐
- LaC 43.
- Do not install plantings on medians less than 5 feet wide. Provide enhanced pavement treatment on these medians.
- ☐
- ☐
- ☐
- LaC 44.
- Design pedestrian waiting areas to be a minimum of 6 feet wide, paved with cast-in-place concrete.
- ☐
- ☐
- ☐
- LaC 45.
- Install tactile warning strips at crosswalks.
- ☐
- ☐
- ☐
- LaC 46.
- Incorporate regulatory signage as necessary refer to appropriate roadway design standards.
- ☐
- ☐
- ☐
- LaC 47.
- Use appropriate plant species as listed on the Maintained Zone Plant List.
- ☐
- ☐
- ☐
- LaC 48.
- Design and install pedestrian refuge island or median to conform with all relevant codes regarding sight lines and other related safety requirements.
- ☐
- ☐
- ☐
- LaC 49.
- Maintain landscape to conform all relevant codes regarding sight lines.



Example of crosswalk plantings

Exhibit C06-17. Constricted Medians with Evergreen Groundcover/Low Shrubs



Exhibit C06-18. Large Pedestrian Refuge Island with Mix of Groundcover/Low Shrubs and Trees



C06.5.3 Roundabout Center

C06.5.3.1 General Guidance

Yes	No	N/A	
☐	☐	☐	LaC 50. Use native grass as groundcover.
☐	☐	☐	LaC 51. Incorporate signage as necessary.
☐	☐	☐	LaC 52. Use appropriate plant species as listed on the Maintained Zone Plant List.
☐	☐	☐	LaC 53. Design planting layout in a simple and clean manner, conforming with roadway corridor and roundabout planting characters. Final planting layout should be approved by Design Review board.
☐	☐	☐	LaC 54. Design and install roundabout centers to conform with all relevant codes regarding sight lines and other related safety requirements.
☐	☐	☐	LaC 55. Maintain landscape to conform with all relevant codes regarding sight lines and other related safety requirements.
☐	☐	☐	LaC 56. Comply with applicable roadway design standards for roadway and any traffic signage design.

C06.5.3.2 Tier I Roundabout Treatment

Tier I roundabouts are located near primary entry gates and other intersections of significant importance with high visibility and traffic volumes.

Yes	No	N/A	
☐	☐	☐	LaC 57. Include two formal half rings of shrubs (one half ring evergreen one half ring flowering shrubs).
☐	☐	☐	LaC 58. Place a static display element or one flowering tree or canopy tree at the center of the roundabout.

C06.5.3.3 Tier II Roundabout Treatment

Tier II roundabouts are located near secondary entry gates and other internal intersections of importance and moderate to high visibility and traffic volumes.

☐	☐	☐	LaC 59. Include one formal ring of evergreen shrubs.
☐	☐	☐	LaC 60. Include formal center sculptural element or one canopy tree in the center of roundabout.

C06.5.3.4 Tier III Roundabout Treatment

Tier III round about treatments occur at lower volume, internal intersections when feasible.

☐	☐	☐	LaC 61. Simple circular evergreen shrubs layout around center to cover minimum 30% of the median.
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Exhibit C06-20. Typical Roundabout Layout, Overhead

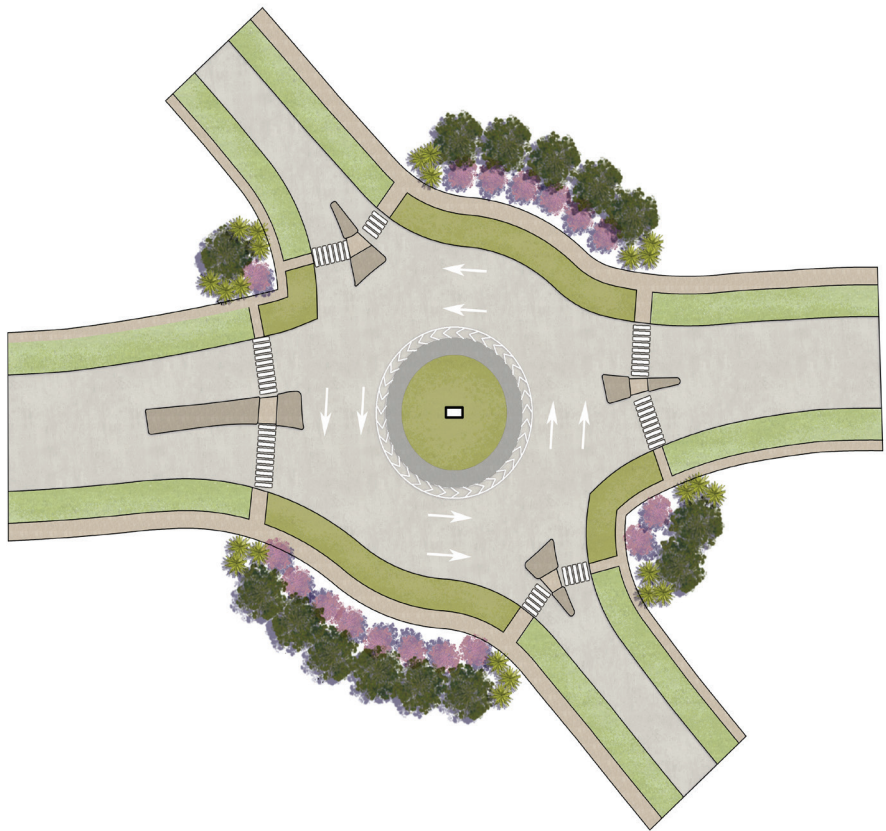


Exhibit C06-19a. Tier I Roundabout Treatment

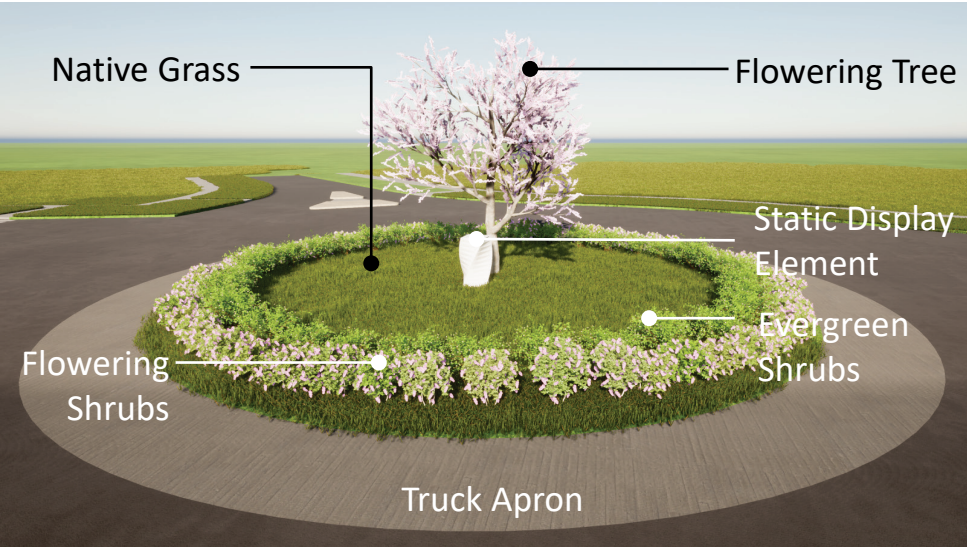


Exhibit C06-19b. Tier II Roundabout Treatment

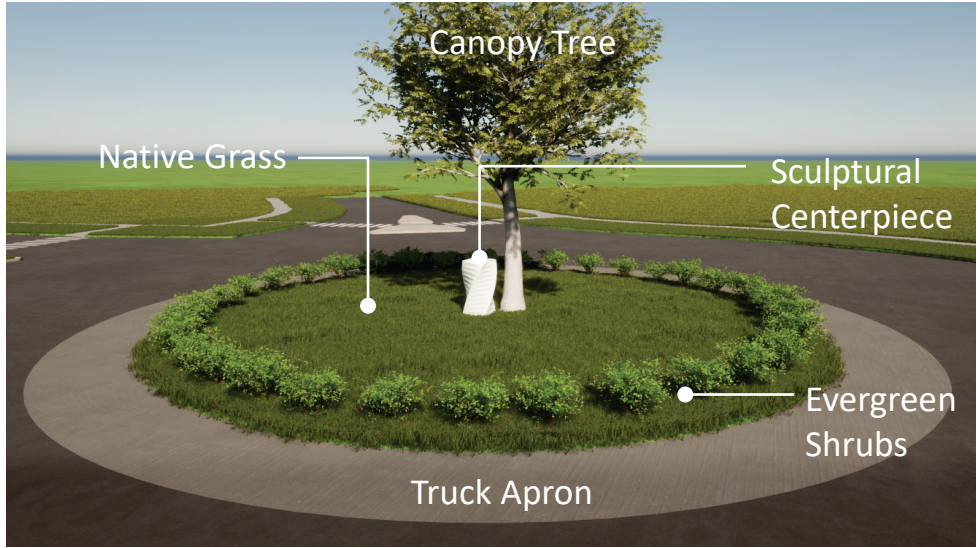


Exhibit C06-19c. Tier III Roundabout Treatment

