

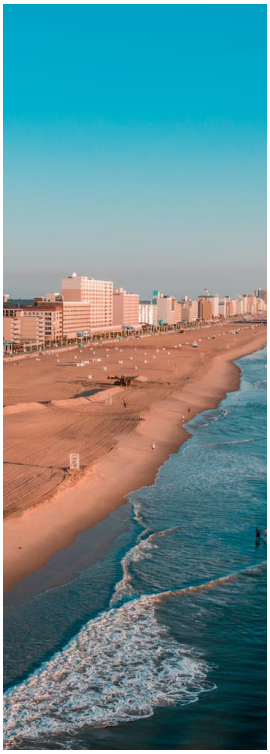



THE CITY OF VIRGINIA BEACH
Virginia Beach Commercial Area Pattern Book
JUNE 2023

Virginia Beach Commercial Area Pattern Book

June 2023

2023 Work Program Architects

Virginia Beach Commercial Area Pattern Book

June2023

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The City of Virginia Beach Department of Planning & Community Development

Work Program Architects

TABLE OF CONTENTS

Section 1

Purpose of the Pattern Book

The City of Virginia Beach Department of Planning & Community Development retained Work Program Architects (WPA) to assist with this project. This research is focused on the primary study area of Bow Creek as a prototypical case study to develop guidelines to assist with the compatibility between commercial redevelopment and existing residential communities. Bow Creek was selected as the primary study area because development patterns and flooding issues in the area are similar to many communities throughout the Suburban areas of Virginia Beach. Because of these similar development patterns, these guidelines can be followed and tailored to commercial areas across the Suburban and Suburban-commercial transition areas mapped on page 3.

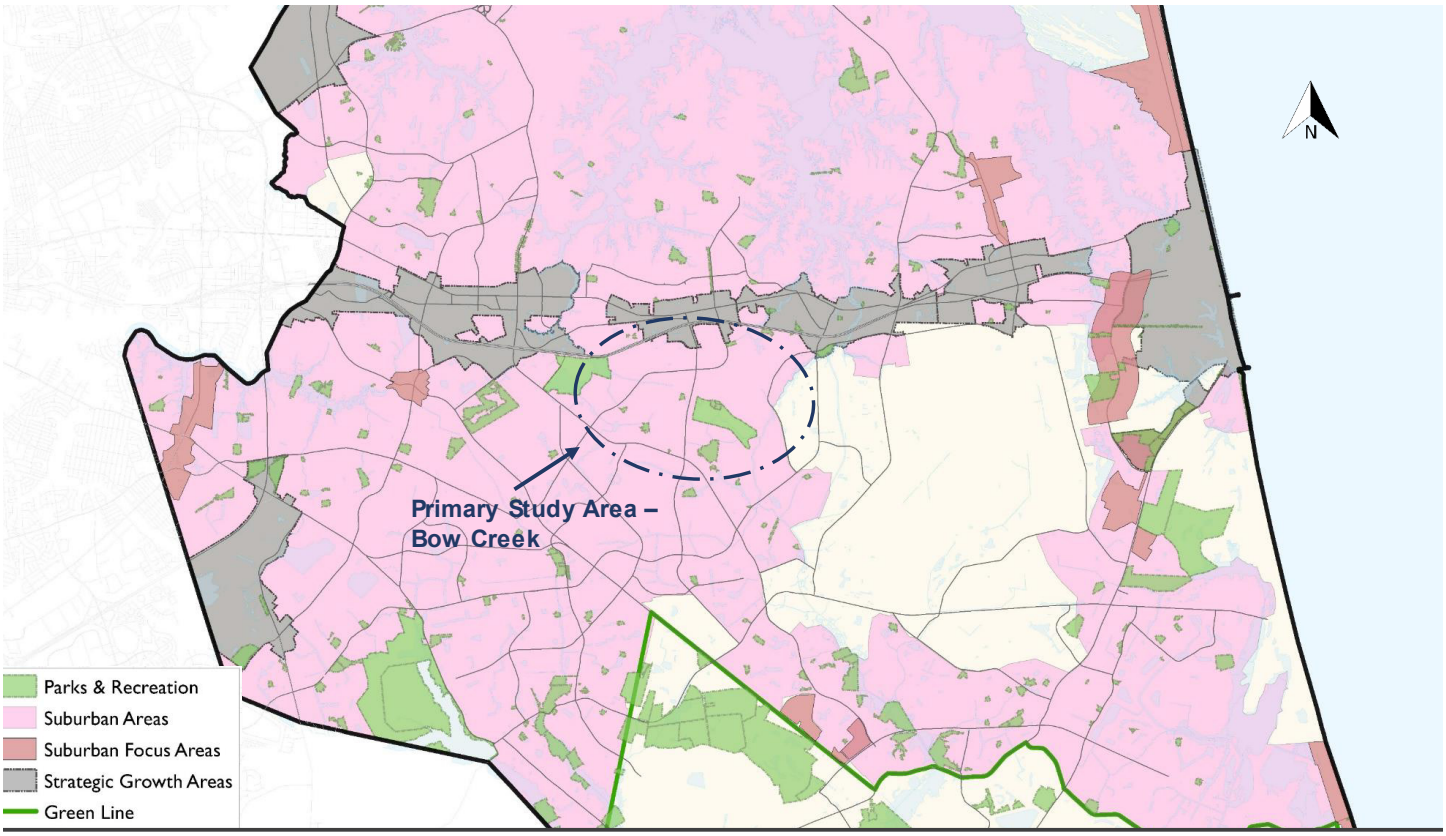
This pattern book provides a step-by-step visualization for redevelopment of existing commercial sites that is compatible with adjacent neighborhoods and stated community goals. Additionally, this document also provides typical illustrations for improving stormwater management as well as pedestrian connectivity and accessibility between commercial and residential areas.

Who is this Pattern Book For?
This pattern book is intended to be used as a conversation-starter between communities, developers, and Planning Staff in the early stages of the development/redevelopment process. It has been created by incorporating information from public input events and stakeholder groups in the study area communities, allowing developers to have a better understanding of what the neighborhoods and communities are looking for in order to make the overall development process more predictable. The Pattern Book should be used by property owners and developers, citizens and citizen groups, Design Review Committees, Planning Commission, City Council, and City Staff when planning or reviewing proposed developments within the primary study areas in this book, as well as other Suburban Areas in Virginia Beach.

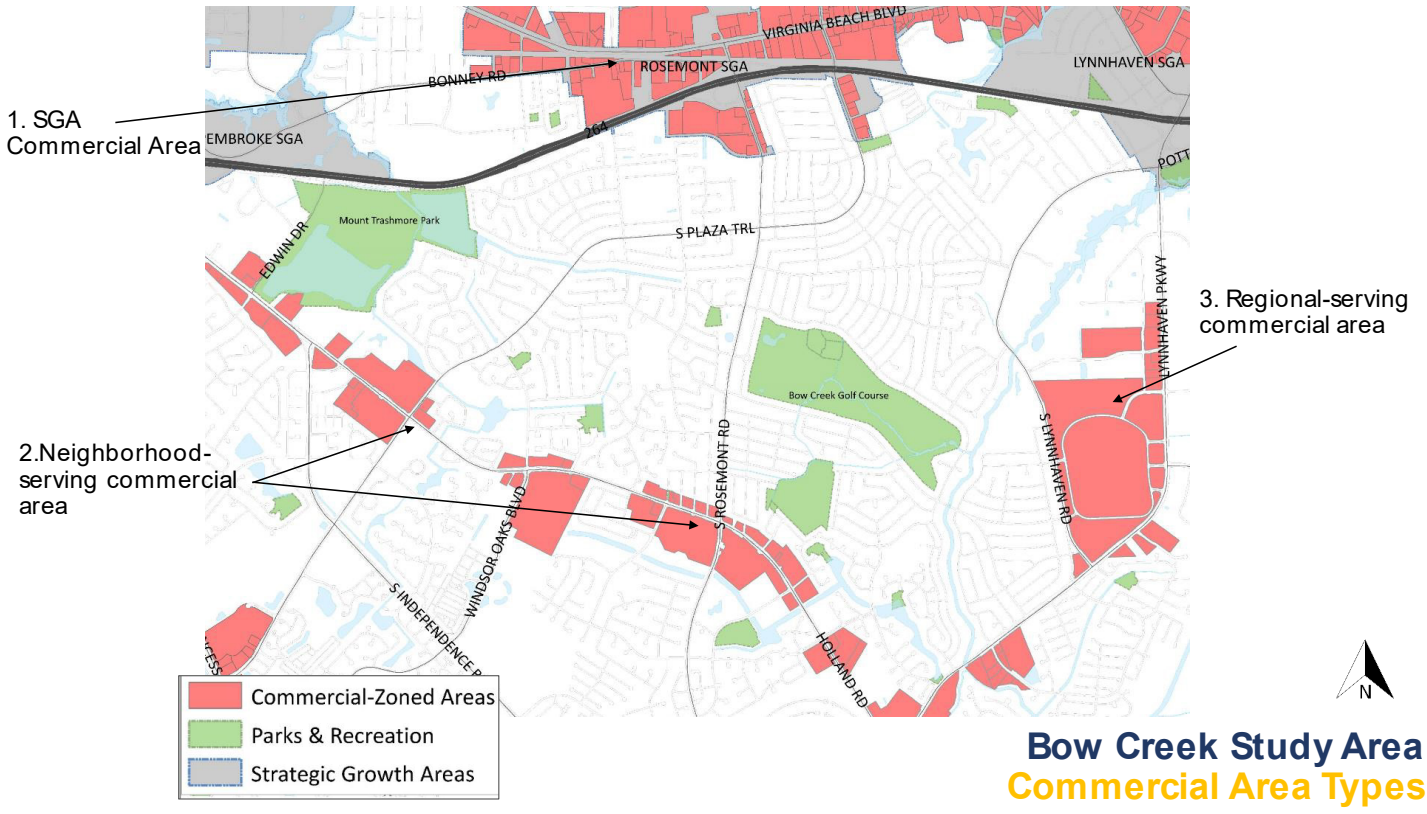
Goals and Objectives:

Quality of Life
- New development that supports high-quality and diverse lifestyles
- Create new opportunities to live, work, and play in every citizen's neighborhood of choice
- Improve multimodal connectivity between residential and commercial areas

Community Resiliency
- Provide strategies and techniques to help adapt to changing the environment
- Support environmentally sustainable design and development
- Improve the overall health, safety, and welfare of the community



Bow Creek Primary Study Area



Bow Creek Primary Study Area and Surrounding Commercial/SGA Areas

COMMUNITY ENGAGEMENT OVERVIEW

To begin this process, the team first needed to meet with those most affected by the pattern book in order to understand their vision for the transformation of nearby commercial areas for the future. It was important to talk with users of every level which include:

- Property owners
- Residents
- Business owners
- City of Virginia Beach staff in various departments, including those working on the new Bow Creek Resilience Park project

Open House meeting with City of Virginia Beach staff to review focus group results and pattern book/toolkit concepts

To address each of these groups, a multi-day, multi-part engagement process was developed:

City of Virginia Beach Department of Planning staff presented the goals and objectives of the project, introduced the WPA team as consultants and explained their roles, and indicated an outline of the scope and timeline for completing this effort. This information was presented at Princess Anne and Thalia Civic League meetings, as briefings to the Virginia Beach Vision group and Bayfront Advisory Commission, and in presentations by staff to the Housing Advisory Committee, the Bicycle/Trails Advisory Committee, and Virginia Beach Planning Commission.

Following the introductory presentations, a hybrid public meeting was held at the Meyera E. Oberndorf Central Library to start the project, present the pattern book concept to the public, seek feedback from citizens, and answer questions from the public. At the meeting, surveys were distributed to attendees along with links to online surveys with the same questions. The results of these surveys were tallied and incorporated into the work done with focus groups.

Following the public meeting, two focus groups were established; one to address residential resilience and resident interests in commercial sites int he Bow Creek focus area, and the other to represent the interests of the business community and broader residential interests. Input from these focus group sessions forms the basis for the recommendations provided on the next page.

INTRODUCTION

Community Engagement Summary

Public Information Meeting - February 23, 2022
The first formal public information meeting was held the evening of Wednesday, February 23rd at the Meyera E. Oberndorf Central Library and was an opportunity for City Staff and the WPA team to brief members of the public about the scope of the project, previous experience in drafting similar guidelines and pattern books. Members of the community were encouraged and instructed how to join upcoming focus group meetings in order to gather further valuable information from the residents and business owners.

A short Q&A session was held, primarily clarifying the scope and purpose of the project as well as addressing immediate concerns and inaccurate information about the details of the project which had been spread through social media posts. Participants both online and in person were given the opportunity to provide feedback in the form of a survey with questions posed during the presentation as well as volunteer to be members of the future focus groups.

Focus Group #1 Meeting - Bow Creek Area Resiliency Toolkit - March 24, 2022
Several members of the Bow Creek residential community, business owners, planning commission members, staff from the City of Virginia Beach and members of the WPA project team met as a group at the Virginia Beach Planning and Community Development office building on the evening of Thursday March 24th. During a presentation from the team explaining the project, the seven focus group members and two planning commissioners participated in an open dialogue focusing on existing conditions within the primary study area in Bow Creek, key aspects of how the group viewed connections to the surrounding commercial areas and future development within them. The group also discussed different types of resiliency and steps that can be taken to mitigate flooding.

Focus Group #2 Meeting - Suburban/Commercial Area Pattern Book - March 31, 2022
Civic league members, Planning Commission members, members of the business community, along with staff from the City of Virginia Beach met with the WPA team on the evening of Thursday March 31st as the second focus group assembled for this project. The primary focus of this group was the Suburban and Commercial areas and developing a pattern book for future development and growth in these areas. During a short presentation and open discussion, the WPA team explained how aspects of previous pattern books were developed and implemented in other areas similar to the ones being focused on for this project. The four focus group members, including business and property owners, and two Planning Commissioners participated in a dialogue and Q&A for just over an hour talking about their experiences and visions for these areas as well as what they'd like to see in the updated guidelines.

Combined Focus Group Meeting to Discuss Pattern Book/Toolkit Concepts - June 22, 2022
Focus Group #1 and #2 invitees, along with staff from the City of Virginia Beach, met with the WPA team on Wednesday evening, June 22nd. The primary focus of this group was the Suburban and Commercial areas. The group developed a set of concepts for design based on the overlap of values shared between the residential community and the commercial development industry.

Pattern Book/Toolkit Concepts Open House Meeting - VB Staff Internal Review Meeting - June 28, 2022
Staff from the City of Virginia Beach met with the WPA team on Tuesday morning, June 28th to review pattern book and resilience toolkit concepts prior to the scheduled public meeting open house later in the week. This was intended to educate staff on the current progress of the projects and get initial feedback in regards to their individual areas of expertise from multiple departments. This input was gathered in the same open house format to allow flexibility of scheduling during the work day and comments/markups among participants on exhibits and discussion with team members. These comments and information was then incorporated into several changes and modifications of exhibits for the public meeting open house.

INTRODUCTION

Community Engagement Summary Cont.

Pattern Book/Toolkit Concepts Open House Review - Public Meeting - June 30, 2022
This meeting was advertised using multiple resources and open to all members of the public to meet with the WPA Team on Thursday evening, June 30th in an open house format to allow for flexibility. The primary focus was to review the set of concepts developed in the first three meetings and further refine them. WPA provided visual samples of how a shopping center may be redeveloped based on the set of concepts shared in the previous meetings and held open discussions with participants in a further effort to father input and opinions on both the commercial area pattern book as well as the resilience toolkit concepts.

Summary
This document is a summary of the findings from these sessions and will be used to guide the team towards developing the project deliverables. Please note that this record is a compilation of the notes taken during the public meetings and is intended to serve solely as such. Statements were recorded and will be reported as they were made; the accuracy of statements made has not been verified by the project team.

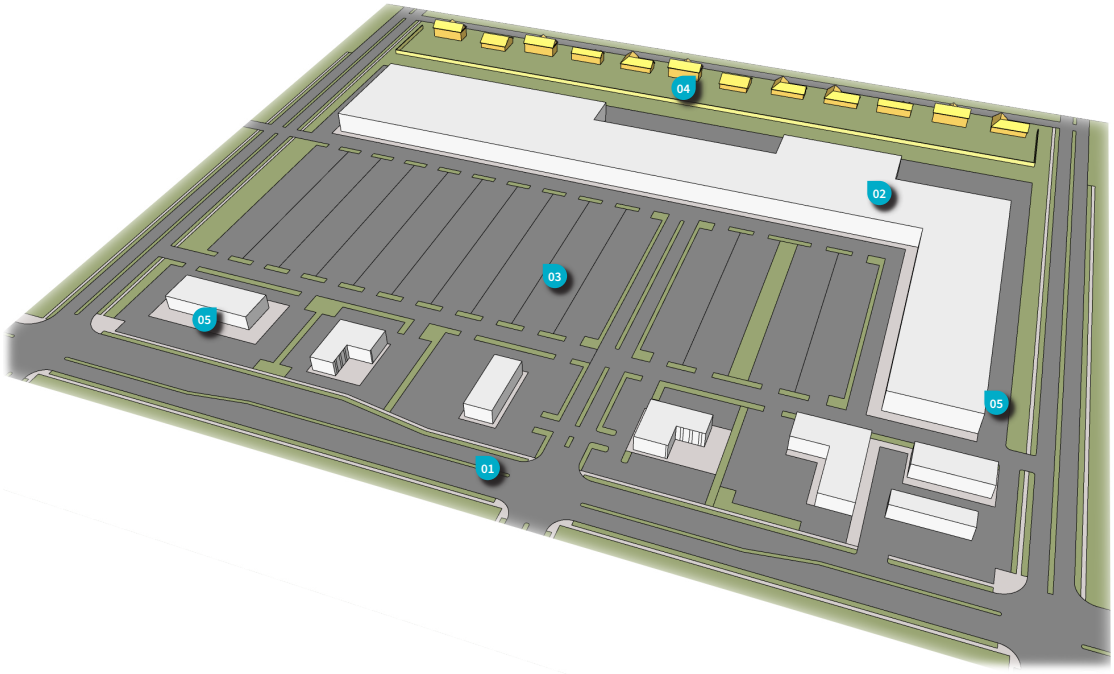
PRIMARY STUDY AREA - BOW CREEK AND SURROUNDING COMMERCIAL AREAS

The map above illustrates the Bow Creek Neighborhood and commercial areas surrounding it. This pattern book aims to address several issues within these areas including pedestrian connections to and from these commercial areas as well as open space and stormwater management. This project was partially funded by a federal grant to study this primary area of Bow Creek and possible identify possible improvements to stormwater management practices as well as creating a toolkit for residents, business owners and developers to help provide flood mitigation strategies for commercial areas and surrounding neighborhood communities that can be applied throughout the city of Virginia Beach.

Commercial Area Typical Existing Conditions

Big Box or Strip Shopping Center with Outparcel Development and Surface Parking

The existing commercial site conditions are based on observation by the study team as well as input from the public and focus group members. Full notes can be found on pages 5 and 6 of this document.



1. Primary Street with small scale retail frontage. Individual, segmented ingress/egress
2. Big box commercial or strip retail building
3. Surface parking lot with impervious pavement
4. Single family development turned away and with limited/no direct access to commercial areas
5. Out Parcel Buildings

Existing commercial properties in the study area are primarily suburban-style strip shopping centers with a large structure towards the rear of the site, farthest from the primary street, with paved surface parking between the structure and the street. Some sites contain outparcel developments, typically 1,500 SF to 5,000 SF standalone buildings that occasionally have drive-through service lanes. The illustration above represents a generic version of the typical commercial site that can found in the Suburban Area. Some of the study sites also have office uses which contain multi-story office buildings with surface parking lots around the building.

As brick and mortar retail continues to evolve, sites like this are likely to be redeveloped in the future. These guidelines aim to produce a site that is complementary to adjacent existing residential development and provides needed and desired services and places to the residents who are already close to the new development, which is key to creating resilient, sustainable, and connected communities.

Most existing commercial properties are separated from adjacent residential development by a fence and buffer strip. These properties were typically developed with the primary structures as far to the rear of the site as possible with back-of-house functions such as loading and garbage collection taking place in the narrow space remaining between the building and the properties behind. Fences serve the dual purpose of screening the commercial areas from residential streets and provide some security to the commercial area, but they also often obstruct pedestrian access from adjacent neighborhoods. It is common in the Bow Creek area for pedestrian routes to be a half mile or longer to walk from a house adjacent to a shopping center to bypass fencing.

Most older developments feature expansive surface parking lots that were constructed as continuous paved surfaces. Newer developments have required tree islands periodically located throughout the parking lots to provide shade and slow down stormwater runoff. These parking lots, in both cases, have been typically designed for access by automobile only and lack the necessary pedestrian infrastructure such as sidewalks and bike racks to make them accessible to nearby residents who may want to walk or ride a bicycle to the development.

General Redevelopment Phasing + Strategies

The following are general steps for developing a plan for redevelopment of commercial sites

Develop an Overall Vision

1. The developer should coordinate the with as many neighboring properties and neighborhood groups as possible
2. Use the guiding principles in this document as they have been vetted by the communities impacted by development in the study areas
3. Include architects, civil engineers, and City staff in the visioning process

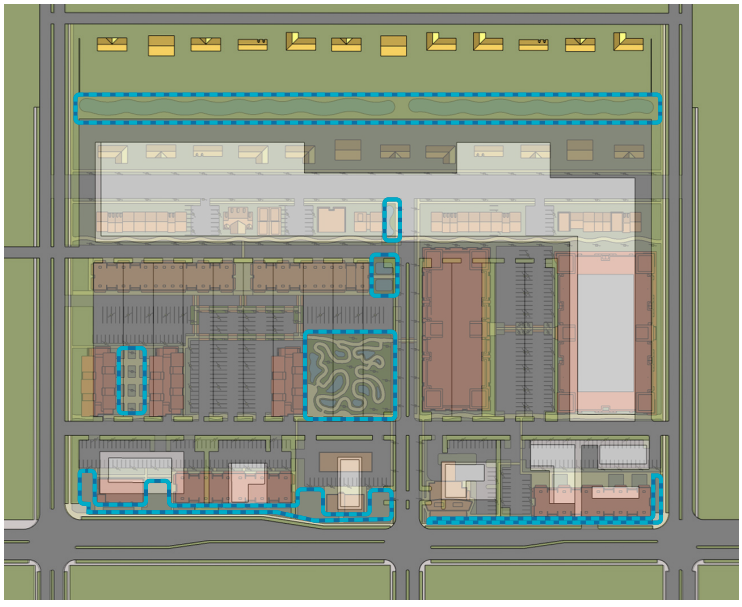
Example concept vision for redeveloped site

Start Underground

1. Understand and develop the vision around the soils on the site
    - Low lying areas of the site or those near waterways may have soils that are difficult to construct taller buildings on
2. Understand and develop the vision around natural site drainage and historic waterways
    - Water will tend to move along historic waterways, even underground, so design to use this to your advantage
3. Include architects, civil engineers, and City staff in the visioning process

Develop around future Storm Water Needs

1. When designing for a phased development, understand the storm water needs of the completed development vision to be sure area is available for storm water treatment when needed

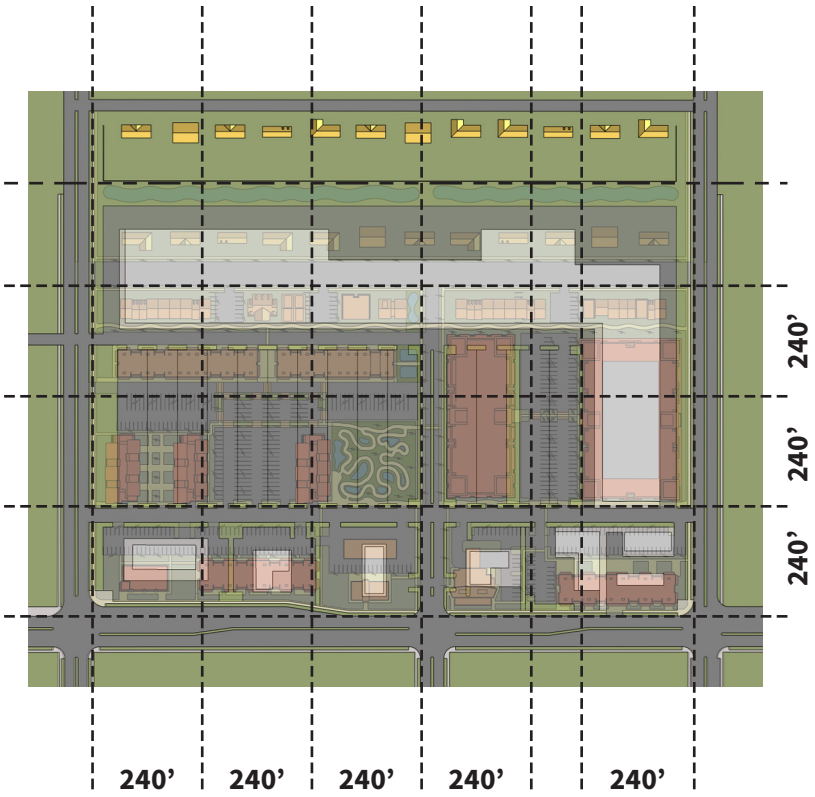


Storm water treatment areas set aside during phased development

General Redevelopment Phasing + Strategies

Divide the Site

1. A key principle in better integrating a development with the adjacent neighborhood is to create a human-scaled place
2. 240 feet (240') is a good distance to start with when dividing a site into "blocks." This is because:
   - This dimension works well with typical property depths, building dimensions, parking lot and garage dimensions, and makes for walkable places when pedestrian paths generally align with the module
   - Buildings and blocks should generally not exceed 600 feet in length if they are to be places where people are comfortable walking

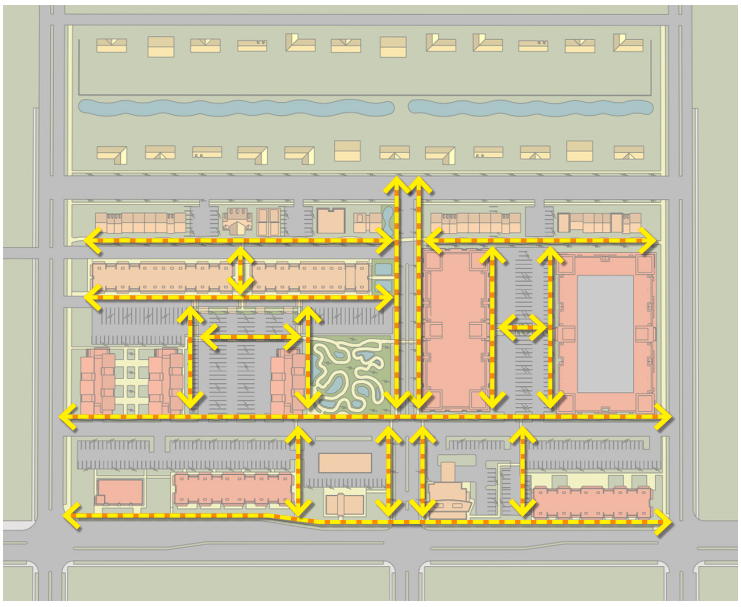


240' module overlayed on site to illustrate how conceptual "blocks" can be developed

Make it a comfortable place to shop or work

Visitors and workers should feel comfortable walking to different businesses without feeling that it is always necessary to drive to reach another destination on the site.

1. Provide comfortable walking paths lined with trees for shade
2. Align walking paths along buildings as much as possible rather than out in the middle of an open space
   - People tend to feel most comfortable along the edges of an open area



A network of pedestrian paths connect the buildings and businesses together within the site, and to the perimeter

Commercial Area Redevelopment Principles

1. Parking areas shaded with tree planting and built with underground storage for runoff collection

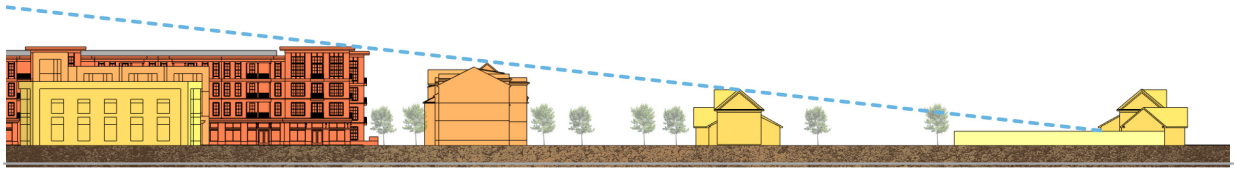
2. New stormwater systems developed as amenity spaces -- Pump track, skate park, playground, walking paths, etc.

3. New multi-use path connects new residential with stormwater amenities and commercial uses

4. Outparcels redeveloped with facades on the primary street calm traffic and create a face to the development to prepare it for future uses

5. Layered building scales at rear of development buffers existing residential from new uses; Increasing scale from one-story at rear to multi-story buildings at the street creates tiers of screening

6. Medium scale mixed-use buildings near primary streets with first floor parking under the building make effective use of available space



Layered building scales help to screen existing residential from larger scale buildings in the new development

The following are general principles for redevelopment of commercial sites that came out of the focus group process.

Modify parking areas to add trees and underground water storage: ideally working towards the Pixelated Parking model from the *Low Impact Development Manual* (see on page 82). Trees provide shade for customer and employee vehicles, pedestrian paths, and building facades reducing energy consumption and heat island effects. They also retain stormwater naturally, both in their root systems and on their leaf surfaces, slowing the rate at which storm systems are filled with runoff. Underground storage detains runoff before slowly releasing it to the filtration area prior to entering the City stormwater system.

Outdoor Amenities: Larger stormwater systems that will need to be constructed to satisfy requirements of redevelopment regulations should be designed as or part of outdoor amenities that attract residents and customers. In cases, these amenities may become a portion of the business model themselves with elements such as skate parks and pump tracks, amphitheaters, and playgrounds able to produce revenue whenever they are not inundated with stormwater.

Outparcels should be developed to become the face of the development and the neighborhood: The end result of this redevelopment is more like an extension of the neighborhood out to the primary street than a completely separate zone. The outparcels (or street frontage if all the same property) create this new neighborhood address with facades that define a strong street edge. In a multi-phase transformation, this can become a first step to create the room necessary at the interior of the site for the other improvements.

Layer buildings of increasing scale from the rear or edges of the site towards the street: The lowest scale buildings closest to the perimeter of the site should be close to the height of the adjacent residential development. Another row of buildings a story or two taller set in towards the interior of the site blocks views from the existing residential to larger scale buildings beyond. The largest buildings should be at the street edge or the interior of the site where they are best screened from view of the adjacent residential. Building orientation and balcony placement of these largest buildings should be carefully considered to maintain privacy.

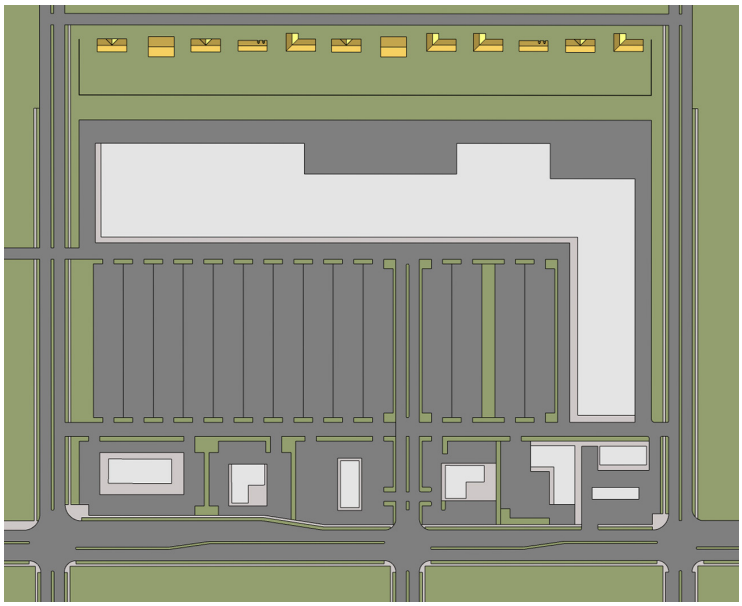
Parking should be located within building footprints: whenever possible to maximize use of the site and reduce stormwater runoff and pollution.

Connect Adjacent Development: Create connections to the primary ystreet with any nearby residential and include comfortable shaded walking paths that pass through the stormwater amenities.

Commercial Area Redevelopment Phasing

The following are a possible phasing strategy for redevelopment of a commercial site. These general concepts can be applied to sites of all scales.

Existing Condition

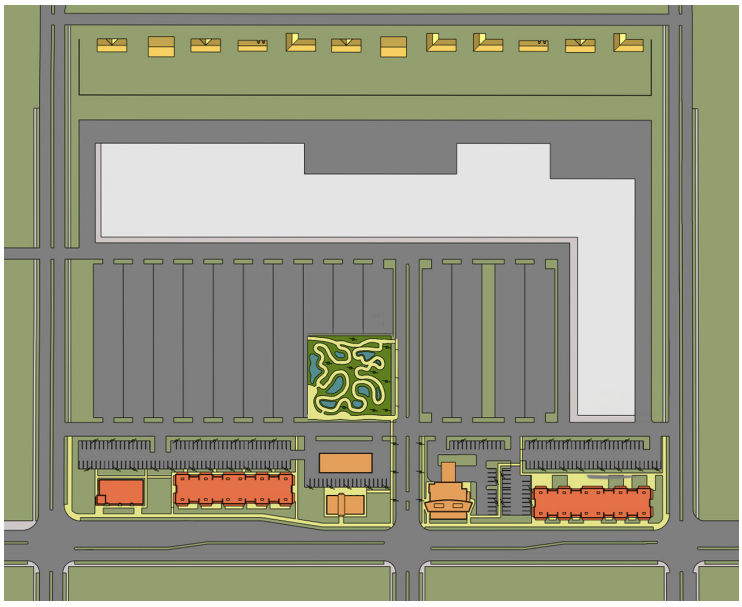


Start with what currently exists: Identify any existing buildings that may be usable in the new development, or reused on a short term basis to maintain a productive site. If none, then start planning around a completely reconfigured site. Before planning to reuse an existing building, particularly for a new use, hire a design professional to research whether or not the building can be modified to meet the requirements of current building codes for the uses in mind. Many commercial retail buildings were purpose built and are very difficult to adapt to new uses.

Phase One

Storm Water Amenity area and Outparcel redevelopment: In this example, a storm water amenity area is developed as a floodable pump track-type amenity with some permanent water retention areas. This is to provide storm water treatment for the redevelopment of some of the outparcel sites. The portions of the site closest to the primary street are developed with buildings that establish an identity for the new development. They should be architecturally welcoming to the public, and provide active frontages that indicate the types of activities to be found in the new development.

Phase Two



Additional outparcel redevelopment: Completion of the primary street frontage puts a new face on the development. These buildings can continue to drive customers to the development site while the rest of the phases are implemented.

Phase Three

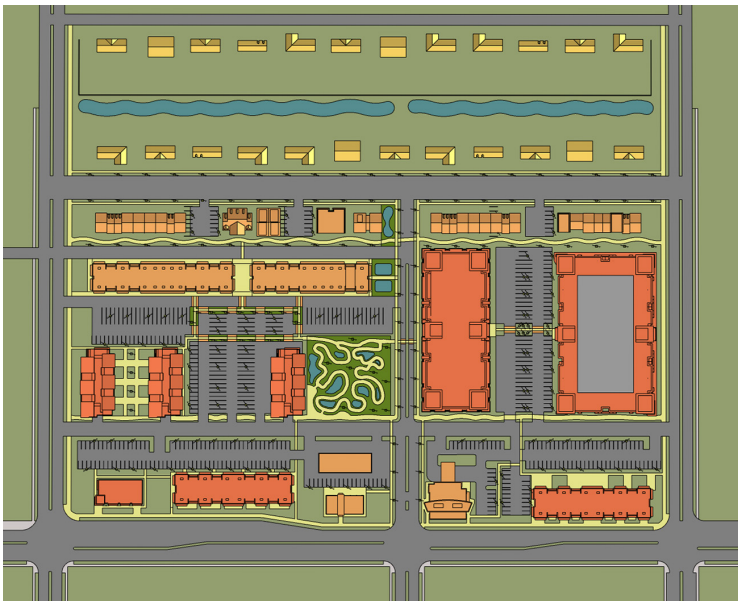
Partial strip center redevelopment and buffer building construction: Small-scale buildings at the edges of the site that abut existing residential properties are developed to screen large buildings closer to the primary streets from view from the existing residential properties. A portion of the strip center is demolished or reconfigured to accommodate the new businesses.

Phase Three

Continued strip center redevelopment and buffer building construction: Continue the pattern of constructing buffer buildings at the edges of the site, then large scale buildings towards the primary streets.

Phase Three

Construct larger-scale buildings: Once the buffer is complete, larger-scale buildings are constructed where they do not intrude on the privacy of the adjacent residential developments.



Section 3 - Character Areas

The following Character Areas were created as part of this pattern book to group and classify similar areas of development in the city. Each of these areas incorporates development with similar characteristics and styles among other similarities. The study areas indicated on pages 14-18 were analyzed to help create these three character areas. They do not have a defined edge and should be utilized as a guiding factor in commercial redevelopment opportunities.

COASTAL CHARACTER AREA

- Somewhat isolated from other commercial developments
- Typically small to medium scale
- Fewer commercial options
- More multi family and multi story residential nearby
- Subject to design guidelines and coastal environmental conditions such as wind, driven rain, blowing sand, airborne salt, etc.
- Stronger pedestrian connections

INLAND CHARACTER AREA

- Significant supply of commercial options
- Stronger vehicular connections, limited pedestrian connections
- Greater proportion of large scale developments
- Mostly adjacent to one to two story single family residential; some adjacent to multi story multi family residential

AICUZ CHARACTER AREA

- Majority of developments closely resemble the “Inland Character Area”
    - Significant supply of commercial options
    - Stronger vehicular connections, limited pedestrian connections
    - Greater proportion of large scale developments

- Majority of properties are in Accident Potential Zone 2 (APZ2); some are in Noise Contour zones only, limiting residential density.

Site Scale Designation

The following site scales were created for each Character Area. These were derived from taking the approximate parcel depth for each specific location as part of this study.

COASTAL CHARACTER AREA

Small (~300’ Lot Depth)

Medium (~600 Lot Depth)

INLAND CHARACTER AREA

Small (~300’ Lot Depth)

Medium (~600 Lot Depth)

Large (~900’+ Lot Depth)

AICUZ CHARACTER AREA

Small (~300’ Lot Depth)

Medium (~600 Lot Depth)

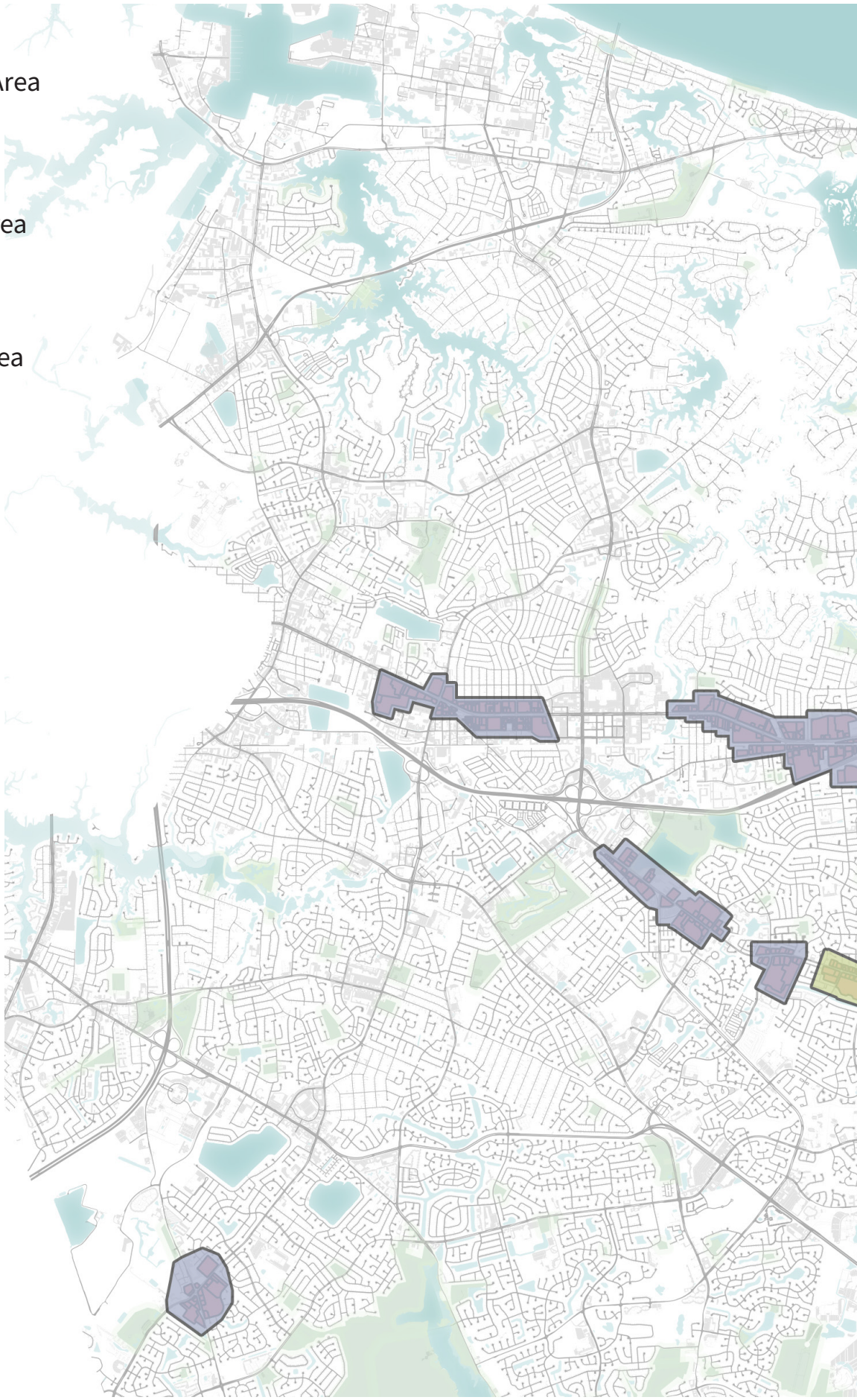
Large (~900’+ Lot Depth)

Character Area Location Map

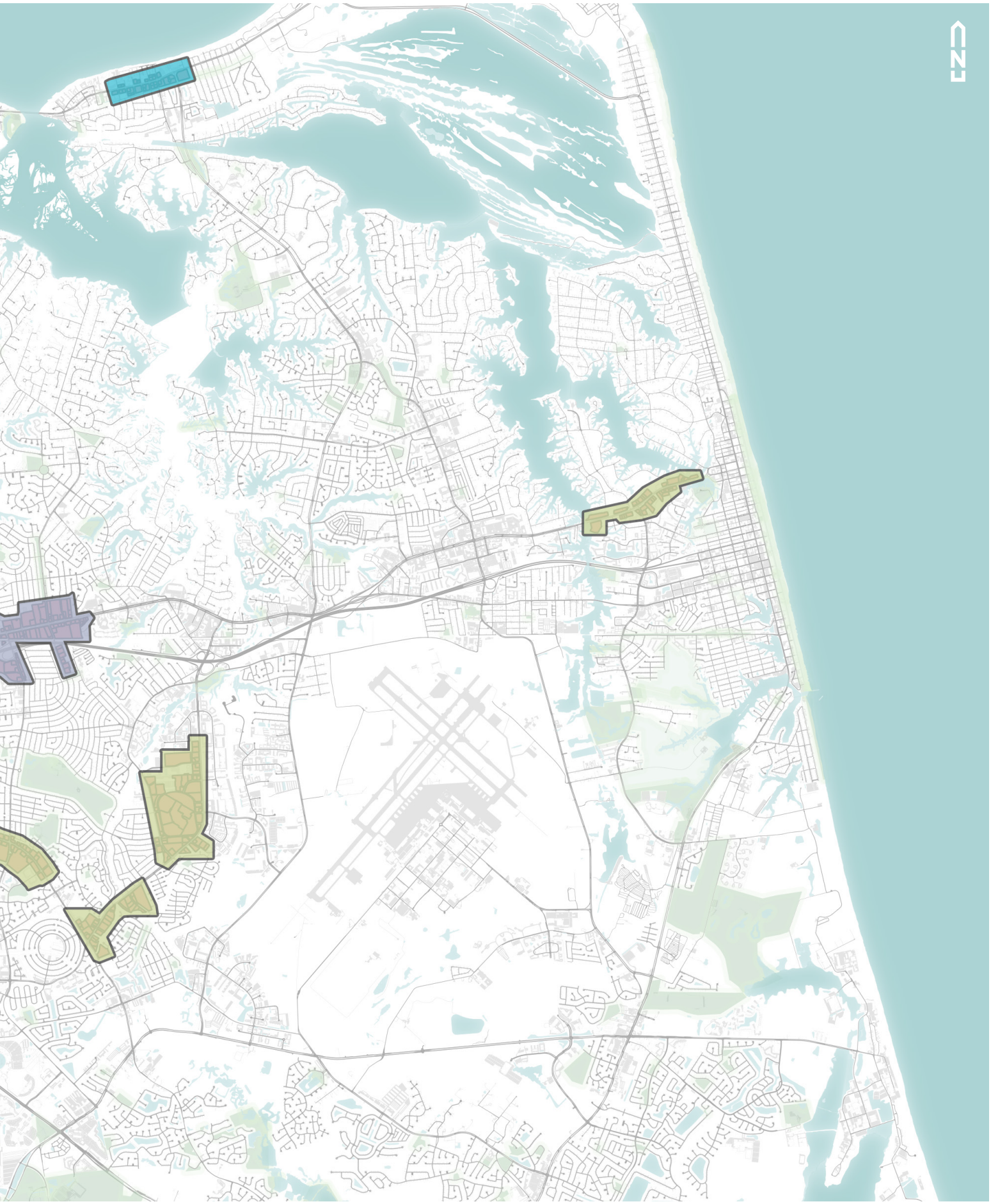
Coastal Character Area

Inland Character Area

AICUZ Character Area



This maps illustrates the locations of each commercial area and connecting corridor included in this study and the Character Areas associated with them within the City of Virginia Beach



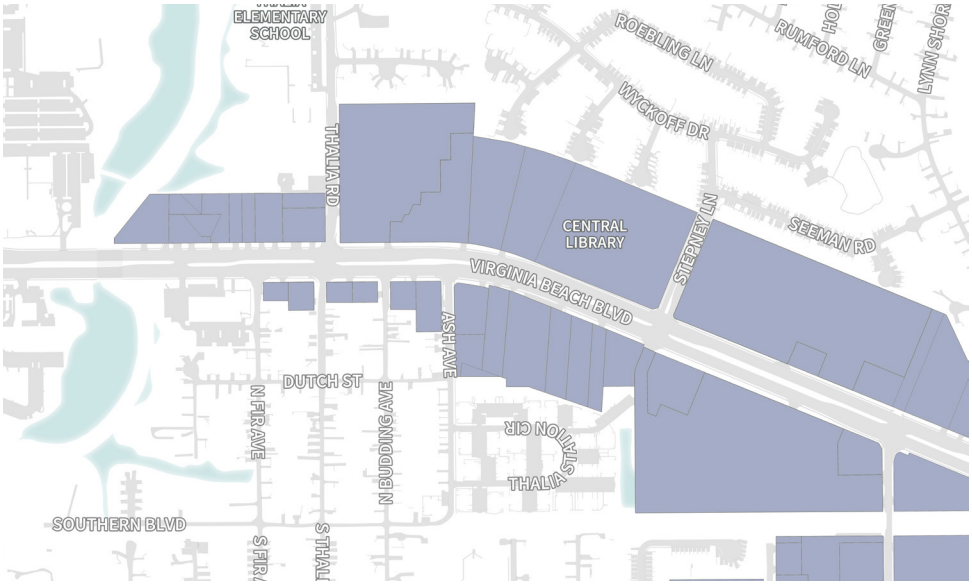
Commercial Areas & Connecting Corridors

These maps illustrate the locations of each commercial area and connecting corridor included in this study and the Character Areas associated with them within the City of Virginia Beach

Shore Drive

(East, N Great Neck Rd)

Commercial Area between Pembroke SGA and Rosemont SGA



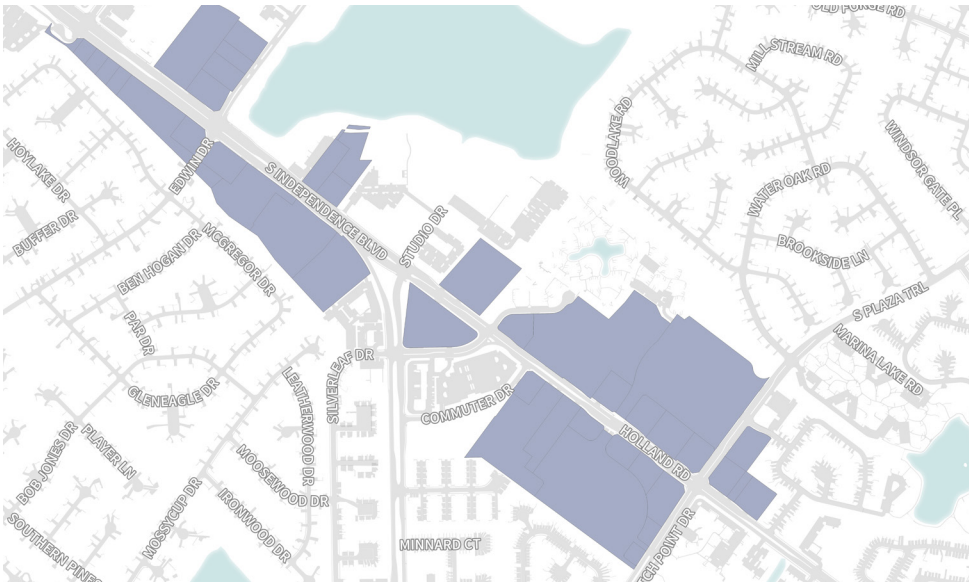
Coastal Character Area

Inland Character Area

AICUZ Character Area

Commercial Areas & Connecting Corridors

Holland Road to S Independence Boulevard



Holland Road and Windsor Oaks Boulevard

Holland Road and S. Rosemont Road

- Coastal Character Area
- Inland Character Area
- AICUZ Character Area

Commercial Areas & Connecting Corridors

Holland Road and Lynnhaven Parkway

Lynnhaven Mall Area

Commercial Areas between Hilltop and Resort SGA

Coastal Character Area

Inland Character Area

AICUZ Character Area

Commercial Areas & Connecting Corridors

1. **Shore Drive (East, N Great Neck Road)**: This oceanfront shopping center benefits from tourists visiting the beaches as well as a year-round residential neighborhood of single family homes, multi-family apartments and condos, as well as a senior-living facility. There has recently been a public trail developed along the edge of this commercial area, which may benefit future development.
2. **Commercial Area between Pembroke SGA and Rosemont SGA:** This central area in Virginia Beach is part of a residential community with a local elementary school, high school, and library. The commercial area is between two highway exits and currently experiences a consistent amount of vehicular traffic. There are infrastructure improvements planned in the area such as public trails and kayak launches
3. **Holland Road to S Independence Boulevard:** This central commercial area is directly next to Mt. Trashmore Park which attracts visitors from around the region. There is a well established residential community of apartment buildings, town homes, and single family homes nearby. The existing businesses currently only have vehicular access, so there is often congestion as people travel from one business to another.
4. **Holland Road and Windsor Oaks Boulevard:** This commercial area has seen recent success and new investment in shopping centers and apartment complexes nearby. Commercial development and adjacent residences are disconnected from the commercial developments and must be accessed by car. As this area continues to grow, commercial areas will need to provide alternative means of access, reducing commute times to an appropriate amount.
5. **Holland Road and S Rosemont Road:** This commercial area is an attractive setting for businesses, as it is surrounded by residential areas. There are successful parks nearby, but not within the commercial areas. New commercial development may benefit from offering residential-friendly amenities to serve the surrounding market.
6. **Holland Road and Lynnhaven Parkway:** This commercial area is close to Oceana Naval facility and development must be done in accordance to the Department of Defense's (DoD) Air Installations Compatible Use Zones(AICUZ) discretionary program designed to promote development compatible with military flight operations. The commercial area is at the intersection of two major thoroughfares and partially bordered by London Bridge Creek. New development should offer connections to adjacent development to limit the congestion on the public roads.
7. **Lynnhaven Mall Area:** This area takes its name and heritage from the Lynnhaven River system that has a major presence here. The entire area is heavily impacted by AICUZ restrictions associated with flight patterns at NAS Oceana. This gateway to the Great Neck peninsula exhibits a large number of nonconforming signs, overhead utilities, roadway access points, and varied building and site designs
8. **Commercial Areas between Hilltop SGA and Resort SGA:** This area is located close to a successful oceanfront resort community and another successful retail center. The commercial study area is immediately adjacent to a golf & yacht club community that is experiencing traffic congestion as a result of the communities success. The City's Active Transportation Plan proposes to create a network of interconnected trails and paths to offer alternative modes of transportation to the commercial area.

COASTAL

OVERVIEW

The Coastal Character Area is defined by proximity to the coastline, typically being located within one to two streets from the water. These developments should be designed in coastal architectural styles to complement the surrounding context. These areas are frequently more isolated than the Inland areas and provide more neighborhood-scale commodity commercial than many of the Inland properties. However, there tends to be fewer commercial options available to those in the Coastal areas. Coastal Character Areas are typically more walkable in their existing form than other parts of the City due to higher numbers of tourists and residents who value living in a smaller beachfront community. These areas also tend to have more existing multi-story residential already in place. Development sites tend to be smaller in the Coastal areas, with Small to Medium sites being most prevalent, and site widths falling into the 250 foot to 500 foot range. Given their increased exposure to environmental conditions such as wind and driven rain from storms, and that design guidelines exist for the Shore Drive Corridor, Coastal sites tend to have a more discernible architectural identity than other areas in Virginia Beach.

KEY ELEMENTS

Commercial developments in the Coastal Character Area are typically located along major roads running parallel to the coastline. The commercial parcels in the Coastal Character Area are smaller than others presented in this pattern book and it's quite common to see two to four separate commercial parcels on one block in the Coastal area. The commercial parcels along the main road frequently serve both single-family and multi-family neighborhoods.

The Coastal Area is closest to the Bayfront and Resort Area, which attract tourists and visitors year-round. This influx of visitors causes a strain on parking lots here. Consideration should be given to improving pedestrian connections and on-street parking options off of Shore Drive where it is practicable and feasible.

COASTAL

NEIGHBORHOOD COMPATIBILITY

STREETSCAPE IMPROVEMENTS

Multi-Use Paths should be built to connect commercial areas to the residential neighborhoods around them.

The sidewalks and multi-use path on Shore Drive and the Cape Henry Trail should see increased usage in the near future and should incorporate site furnishing improvements, such as:
- Pedestrian-scale lighting
- Benches
- Trash receptacles

EXISTING

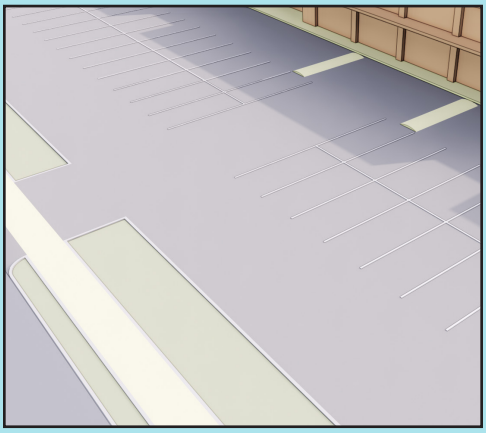
PROPOSED

PEDESTRIAN CONNECTIONS

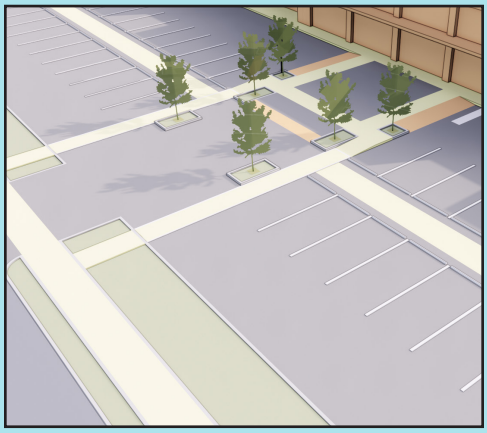
Shopping centers and retail establishments should offer attractive and inviting pedestrian scale features, spaces, and amenities. These features and community spaces shall connect to internal or public walkways and, if present, to the bikeway network, and shall be constructed of materials of at least equal quality to that of the principal materials of the building and landscape.

Pedestrian walkways should provide access from the street side sidewalk and the parking area to the primary building so pedestrians are afforded the shortest possible walk across the drive aisles.

Walkways should be anchored by special design features that do not adversely affect pedestrian safety such as towers, arcades, porticos, pedestrian light fixtures, planter walls or other architectural elements that define circulation ways and outdoor spaces. Walkways should be landscaped and readily distinguishable from drive aisles, especially where walkways cross drive aisles. Use durable, low-maintenance surface materials like scored or colored concrete.



EXISTING



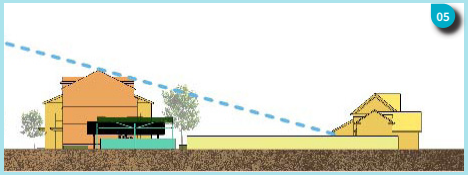
PROPOSED (Traffic Calming with speed table and landscaping)

PROPOSED OPTIONS FOR SMALL LOT - 300' DEEP

COASTAL CHARACTER AREA

DESIGN PRINCIPLES

1. Parking areas should be reconstructed as Pixelated Parking and be planted with native salt tolerant species. Omit permeable paving stormwater practices as they will likely clog with sand too quickly to be effective.
2. Large stormwater systems should be designed to function as salt tolerant wetlands when designed as permanently wet or as a dry swale. All systems should be vegetated with native, salt tolerant plants. Boardwalks, gazebos, volleyball courts, and other beach-friendly recreational activities should be incorporated into the stormwater management systems so that they are an integral part of the function of the site.
3. Develop regular connections to the Cape Henry Trail and other multi-use paths in the area for pedestrian and recreational use. Encourage connections that bridge the existing stormwater bioswales and connect sidewalks to the Cape Henry Trail.
4. Development should utilize the guidance for building height, location, and increased landscaping as depicted in the *Shore Drive Corridor Plan* and *Shore Drive Design Guidelines* to create an inviting street frontage on Shore Drive . These guidelines are used as primary tools in the development process and should be followed for any redevelopment within the Shore Drive Corridor.
5. Several types of development would be appropriate along Shore Drive. Example 4A shows a one story development providing neighborhood scale retail and services. It is pulled close to the street, but does maintain a row of teaser parking on the primary street for convenience. Example 4B illustrates taller buildings pulled to the street and oriented perpendicularly to the primary street so that they impact existing residential development behind the site the least. They are buffered by shallow, mid-size buildings along the rear of the lot which are oriented so that they face out towards the primary street to maintain the privacy of the existing residential. This example also allows for increased sight lines and visibility of parking areas, potentially increases safety in certain cases. Example 4C illustrates a taller building parallel to the primary street with deeper one to two story buildings at the rear of the site to buffer the existing residential. This building type would be most appropriate for small neighborhood retail, craft manufacturing, or entertainment uses.
6. Parking is a challenge for many businesses along the Shore Drive Corridor. Incorporating parking into building footprints to the greatest extent possible would help.



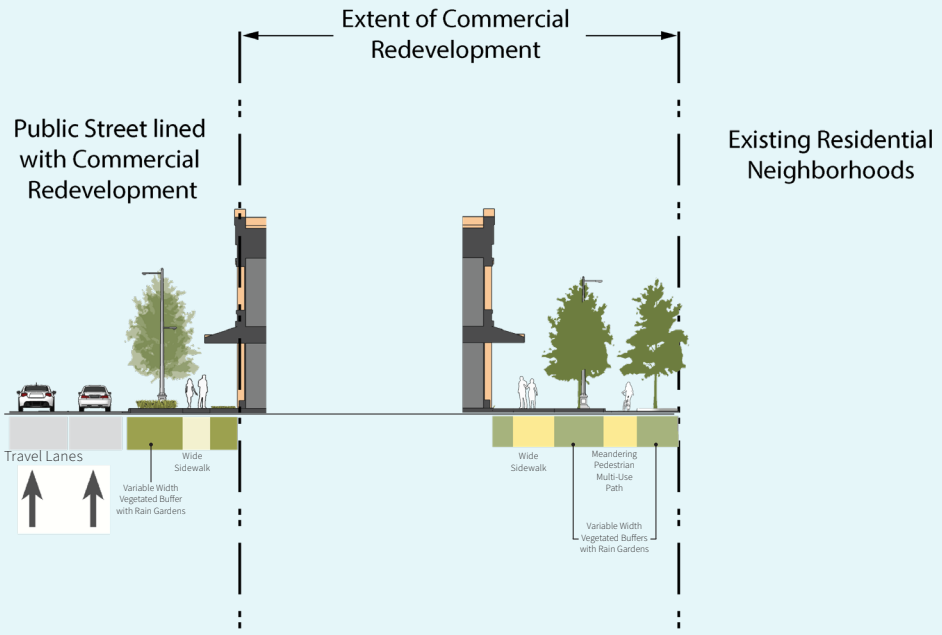
New Taller Buildings at street edge

Existing Single Family Residential

COASTAL CHARACTER AREA

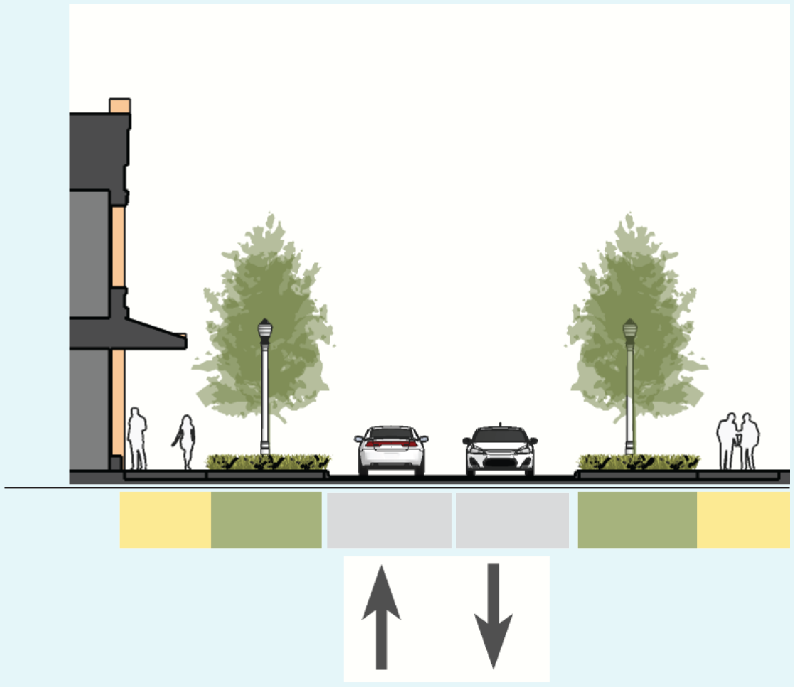
STREETSCAPE IMPROVEMENTS

PROPOSED - STREET SECTIONS



Commercial buildings should be pulled to the street edge where it is relavent to the surroundings rather than having them pushed to the rear of the property

PROPOSED - STREET SECTIONS



Street edges should be lined with vegetation buffers where possible allowing for safety, screening, and potential traffic calming

COASTAL STUDY AREA: SHORE DRIVE CORRIDOR

OVERVIEW

The Shore Drive Corridor is truly a unique area within the City of Virginia Beach. Not only is it a favorite destination among locals for its numerous restaurants and retail shops, it is also a popular connection between the Bayfront and the Resort Area, as well as a gateway to the the Chesapeake Bay Bridge Tunnel. As laid out in the *Shore Drive Corridor Plan*, the vision for the Shore Drive Corridor is to re-establish a coastal character to the commercial frontage through architectural styles and site configurations that accommodate a relaxed beach-front lifestyle. The corridor has strong east-west pedestrian connections by way of the Cape Henry Trail. Residents and tourists use the Cape Henry trail to hike, walk, and bike with friends, family, and pets. This is one commercial area located along Shore Drive but design principles and guidance in the Coastal Character Area should be applied throughout commercial areas located nearby.

The Cape Henry Trail is a successful public amenity that is routed through this commercial area. Commercial properties here pre-date the Cape Henry trail's construction and are not directly connected to the trail. They are separated by a drainage ditch, fence, and/or vegetation.

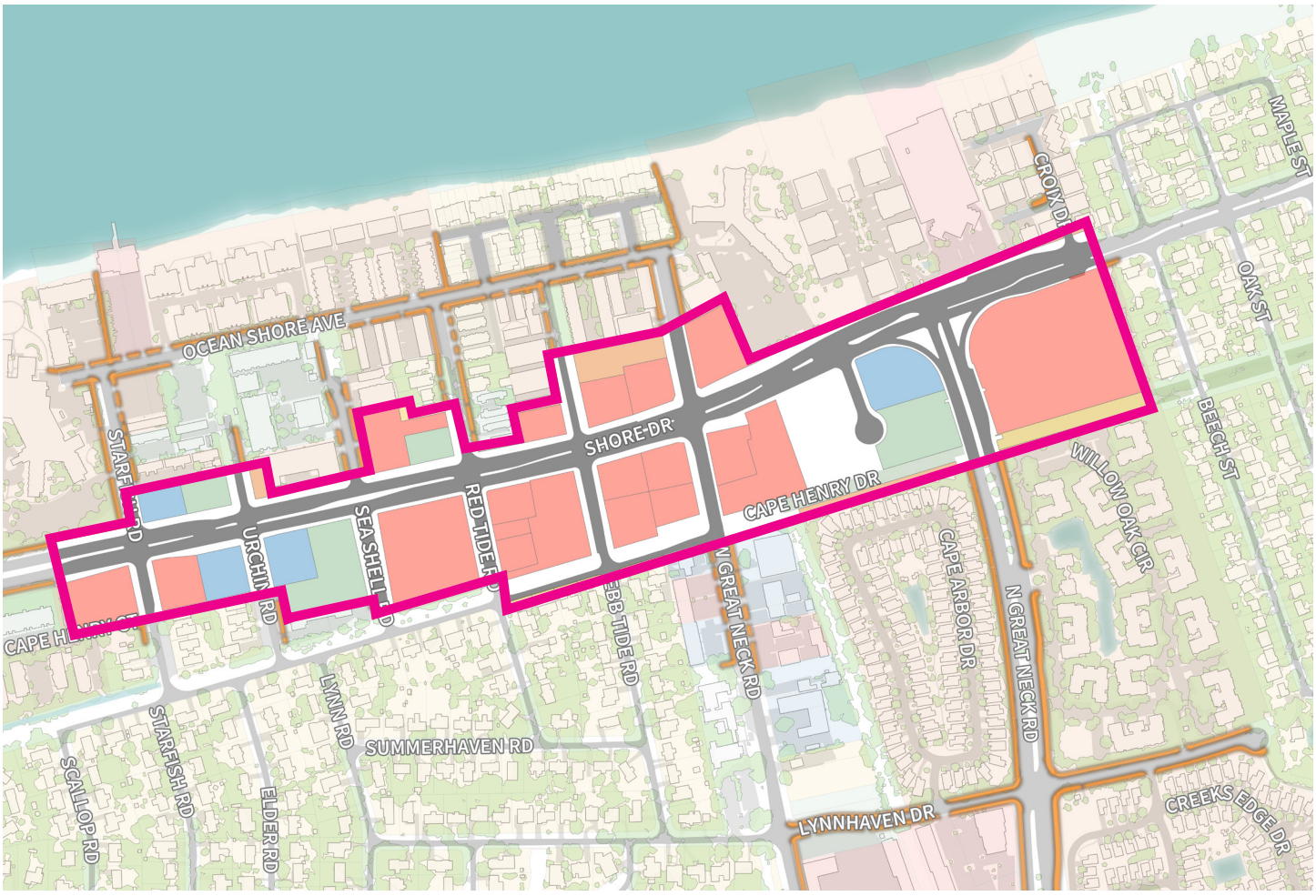
Site Scales

Small **Medium**

COASTAL STUDY AREA: SHORE DRIVE CORRIDOR

DESIGN PRINCIPLES

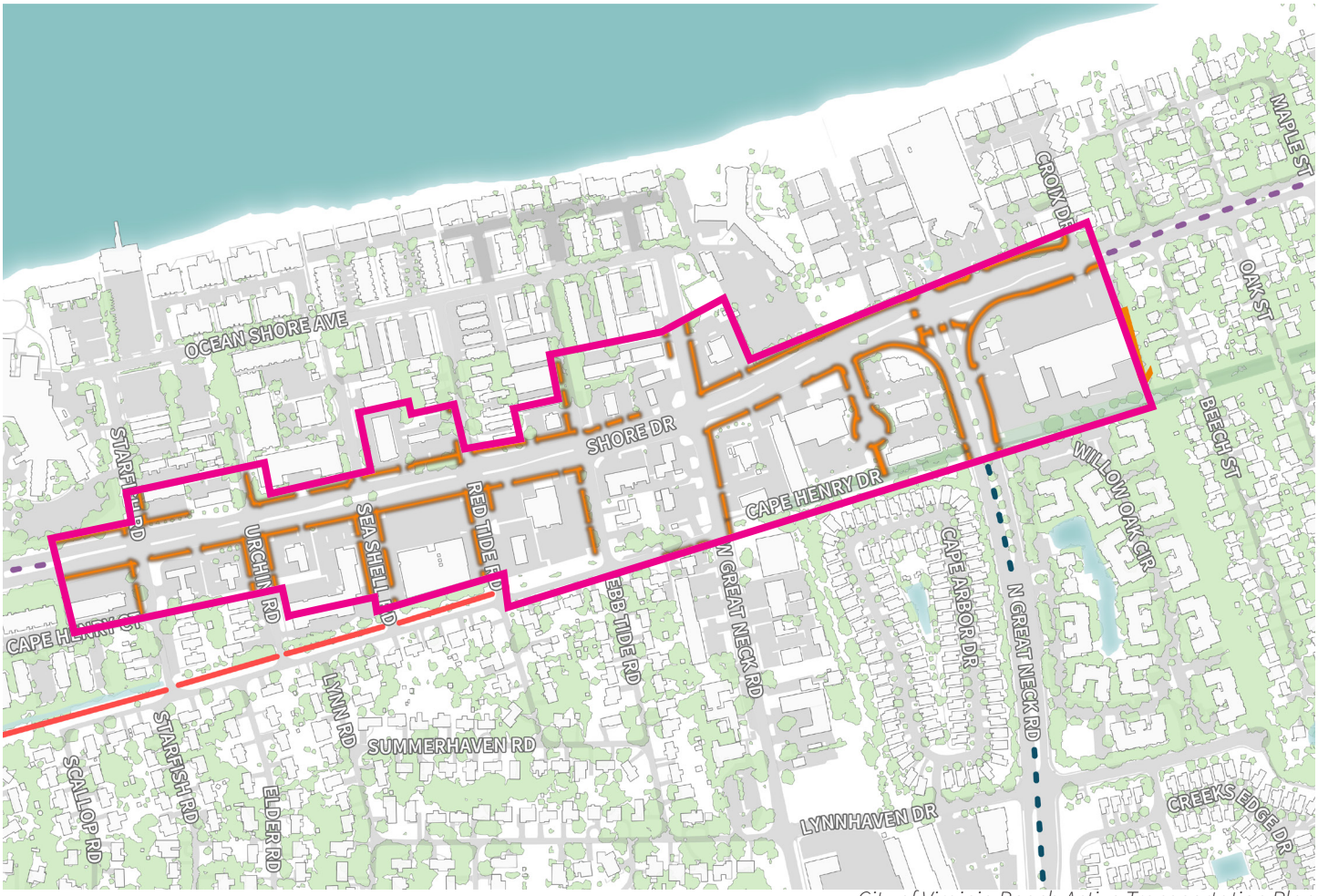
The unique characteristics of the existing development in this area should continue, and new development should take surrounding parcels into consideration early in the process. The previous plans created for Shore Drive *(Shore Drive Corridor Plan, Shore Drive Corridor Design Guidelines)* should continue to be implemented and followed in order to preserve the naturally occurring environment and established character of the area. The majority of commercial sites are of the small scale and are typically less than 350 feet in depth and width. The north side of Shore Drive has areas where buildings have been brought to the street edge and create a fairly continuous facade line. As future development occurs and the *Shore Drive Corridor Plan* is implemented, landscape, building facades, and streetscape improvements should be incorporated to establish a continuous edge to Shore Drive. This continuous edge is critical in creating an environment in which drivers naturally drive at slower speed which are the safest for pedestrians walking along and across the street, and are also the most conducive to supporting the businesses located along the street.



COASTAL STUDY AREA: SHORE DRIVE CORRIDOR

IMPROVED CONNECTIONS

The Shore Drive corridor currently has a well-loved east-west pedestrian path, called the Cape Henry Trail. This trail could be a safe pedestrian path, connecting pedestrians to shopping along Shore Drive, with north-south connections from the Trail to the commercial properties. According to survey responses and public input, residents would most like to see neighborhood-serving commercial such as small hardware stores, grocers, and other businesses which make life convenient without needing to leave the Shore Drive Corridor.



City of Virginia Beach Active Transportation Plan

Existing Facilities

- Shared Use Paths
- Conventional Bike Lanes (On Road)
- Sidepaths
- Nature Trails
- Recreational Loop

Proposed Facility Type (Current)

- Shared Use Path
- Protected Bike Lane
- Bike Lane
- Sidepath

COASTAL STUDY AREA: SHORE DRIVE CORRIDOR

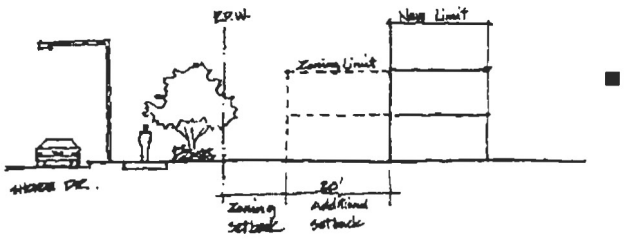
NEIGHBORHOOD COMPATIBILITY

The Shore Drive residential neighborhood is made up of primarily multi-family dwellings and single-family homes. Shore Drive is the main road of this area and divides the neighborhood. One section is waterfront and home to primarily multifamily dwellings, the other is land-bound and hosts a majority of the single family homes. The shared line of Shore Drive is currently commercial uses that benefits all residents and is also host to many tourists in the warmer seasons.

The study area offers commercial uses in the form of retail, gas stations, lodging, restaurants and bars. Planning for these transient, sometimes late night, uses to exist close to single family neighborhoods that expect peace and quiet will be an important part of redevelopment that intends to contribute to the neighborhood.

Redevelopment may also benefit from the existing Cape Henry Trail. It's a well traveled pedestrian path that new development should connect to with a series of sidewalks, paths, trails and crosswalks.

Currently most commercial properties in the area don't have a residential component, but a developer may seek to re-zone property in order to include residential space. A simple model illustrated on page 111 of the *Shore Drive Corridor Plan* states that buildings can add one floor on top of existing zoning height limits for every 20 feet of additional setback from required setback line adjoining right-of-way. Most residences here are no taller than three stories, so the height and scale of any new construction should be similar to the surrounding areas, with the taller, three story buildings should be located closer to Shore Drive where applicable, to minimize any negative impacts on privacy felt by neighboring smaller homes.



Shore Drive Corridor Plan on page 111
Illustrates adding an additional floor for an additional 20 feet of setback from adjoining right-of-way

Shore Drive Corridor Plan on page 111
Illustrates low and moderate height buildings should be encouraged throughout the corridor in order to better reflect the existing residential character and neighborhood scale

INLAND CHARACTER AREA

OVERVIEW

Much of the development in Virginia Beach has occurred away from the immediate coastal environment and area immediately adjacent to NAS Oceana. This Character Area addresses these locations. Much of this area has been developed residentially with a diversity of neighborhood types that are supported by small, medium, and large commercial centers.

To support the connection between residential and commercial areas, the vehicular infrastructure of the Inland Area is quite robust. The pedestrian infrastructure is currently strengthened with the implementation of the Active Transportation Plan.

As development continues in this area, careful consideration should be given to reducing the impact that stormwater runoff has within the watershed. Stormwater management practices should be designed as park-like spaces, with pathways, shading, and site furnishings that further strengthen the pedestrian infrastructure.

Current development trends suggest that redevelopment of commercial properties will include structures built at three stories or more. Care should be taken with the location and orientation of these buildings, when built on lots adjacent to residential communities, to preserve any privacy that adjacent residents currently enjoy.

Key Elements

Developments in the Inland Character Area are typically separated from adjacent parcels by natural features or constructed barriers. Most parcels are accessed by multiple drive aisles, where asphalt is the most common surface material with a raised 5’ concrete sidewalk lining the buildings’ main facades.

As a result of this development style, it is more convenient, and more common, for shoppers to use personal vehicles to move about the shopping center than it is to walk. This currently is a burden on the vehicular infrastructure and also represents an opportunity for improvement in new developments.

INLAND CHARACTER AREA

RECOMMENDATIONS

S Lynnhaven Parkway Multi-Use Path

Multi-Use Paths should be built to connect commercial areas to the residential neighborhoods around them.

A great example of these multi-use paths can be found to the south of the Bow Creek neighborhood along the west side of Lynnhaven Parkway. These connecting paths should incorporate site furnishing improvements for safety and increased aesthetic appeal, such as:

- pedestrian-scale lighting
- benches
- trash receptacles

Existing Connection to Adjacent Residential Neighborhood

Existing “Back of House” of Commercial

INLAND CHARACTER AREA

PEDESTRIAN CONNECTIONS

Shopping centers in the Inland Character are generally larger than in the Coastal Area. Retail establishments should offer attractive and inviting pedestrian scale features, spaces, and amenities.

These include, but are not limited to:
- parks
- playgrounds
- shade structures
- tables
- seating
- bike storage
- fitness areas

All such features and community spaces should connect to internal or public walkways and, if present, to the bikeway network, and shall be constructed of materials of at least equal quality to that of the principal materials of the building and landscape.

Pedestrian walkways should provide access from the parking area to the primary building in such manner that pedestrians using walkways will be required to traverse the vehicular parking aisle to the minimum extent possible.

Walkways should be anchored by special design features such as towers, arcades, porticos, pedestrian light fixtures, planter walls or other architectural elements that define circulation ways and outdoor spaces. Walkways should be landscaped and be readily distinguishable from driving aisles where they traverse such aisles through the use of durable, low-maintenance surface materials such as pavers, bricks, scored concrete or similar architectural treatments.

SMALL LOT - 300’ DEEP PROPOSED

MEDIUM LOT - 600’ DEEP PROPOSED

LARGE LOT - 900’ DEEP PROPOSED

INLAND CHARACTER AREA

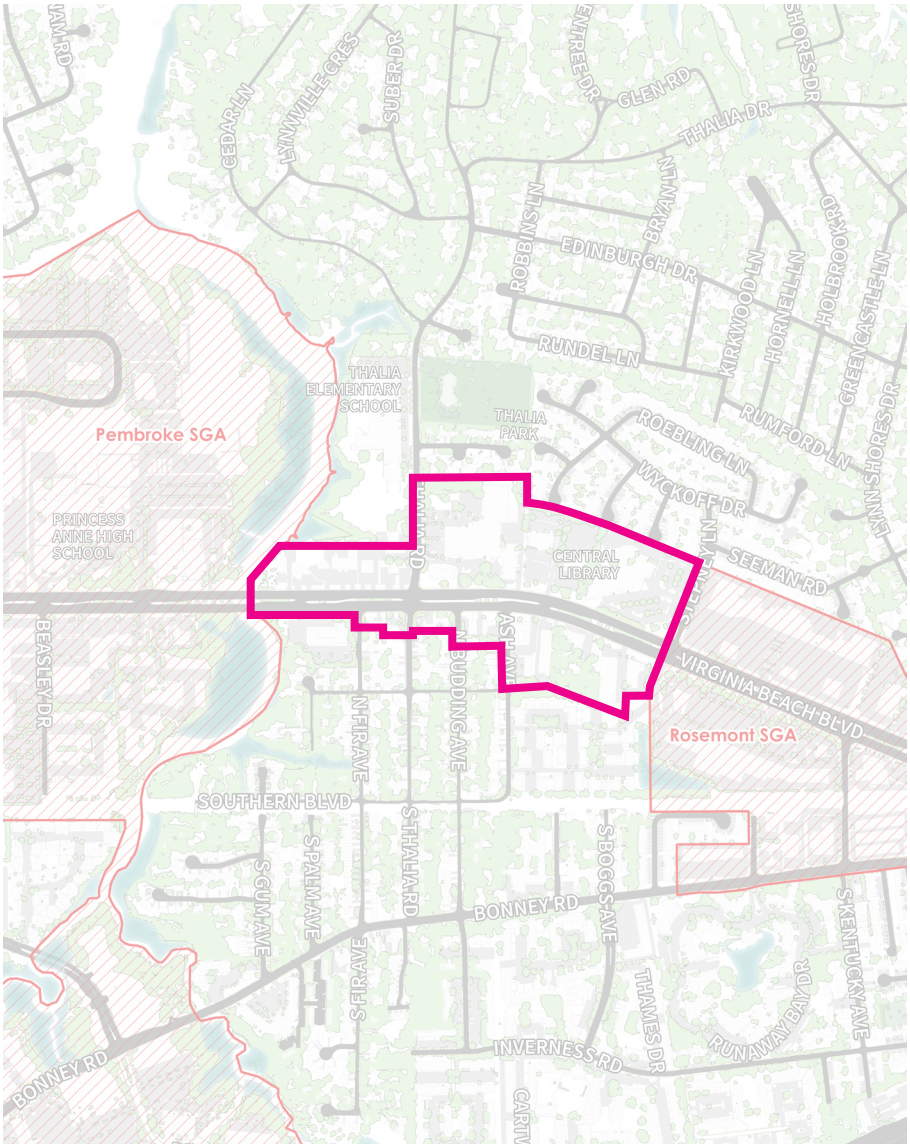
STREETSCAPE IMPROVEMENTS

PROPOSED - STREET SECTION

INLAND STUDY AREA: PEMBROKE TO ROSEMONT

OVERVIEW

The vision for the commercial area between Pembroke and Rosemont SGAs is to have a buffer of low-to-medium-density mixed-use development between Virginia Beach Boulevard and existing residential communities within a park-like setting that serves the adjacent suburban residential neighborhoods. Connections between residential and commercial uses should be increased, using separated multi-use paths to mitigate vehicle congestion along roads connecting Virginia Beach Boulevard to adjacent neighborhoods.



DESIGN PRINCIPLES

This area is located at the center of the city, east of Pembroke SGA. The development pattern in the area is vehicle-oriented with a series of commercial strip malls.

There are many sidewalks that are interrupted by curbcuts, making it more difficult for people to travel on foot. If there are sidewalks in a commercial area, they often line the perimeter of the property with no continuous pedestrian connection to the actual businesses within the strip malls and commercial areas.

The city also owns the land area that was once a railroad corridor. This is an approximately 36 foot wide linear strip of public land that will see infrastructure improvements to create a tangible return on investment.

GOALS

- Increase market potential of the area by phasing public investment to create a “transit ready” framework
- Create a list of criteria for an environment designed to facilitate walking along Virginia Beach Boulevard in this area
- Improve vehicular and pedestrian connections from the well-established neighborhoods, within an easy walking distance , to the Virginia Beach Boulevard corridor.

INLAND STUDY AREA: PEMBROKE TO ROSEMONT

SITE SCALES

DESIGN PRINCIPLES

This neighborhood-serving commercial area is located along the east-west thoroughfare of Virginia Beach Boulevard. There is well-established infrastructure for vehicular travel in the area. A majority of these commercial parcels are developed to be convenient only to the patron visiting by vehicle.

Small parcels may become quickly burdened by traffic congestion if each visitor must travel by personal car. Increasing pedestrian connections between commercial areas and nearby residences should reduce car trips for locals.

As the destinations and public trails adjacent to this area develop, new investment should be made to infrastructure that supports appropriate pedestrian connections. These may be bike paths to trails, or private sidewalks that connect to the public right-of-way. Offering alternate means of access that are as convenient & comfortable as of travel that's as enjoyable as driving will help mitigate increasing traffic congestion.

INLAND STUDY AREA: PEMBROKE TO ROSEMONT

EXISTING CONDITIONS

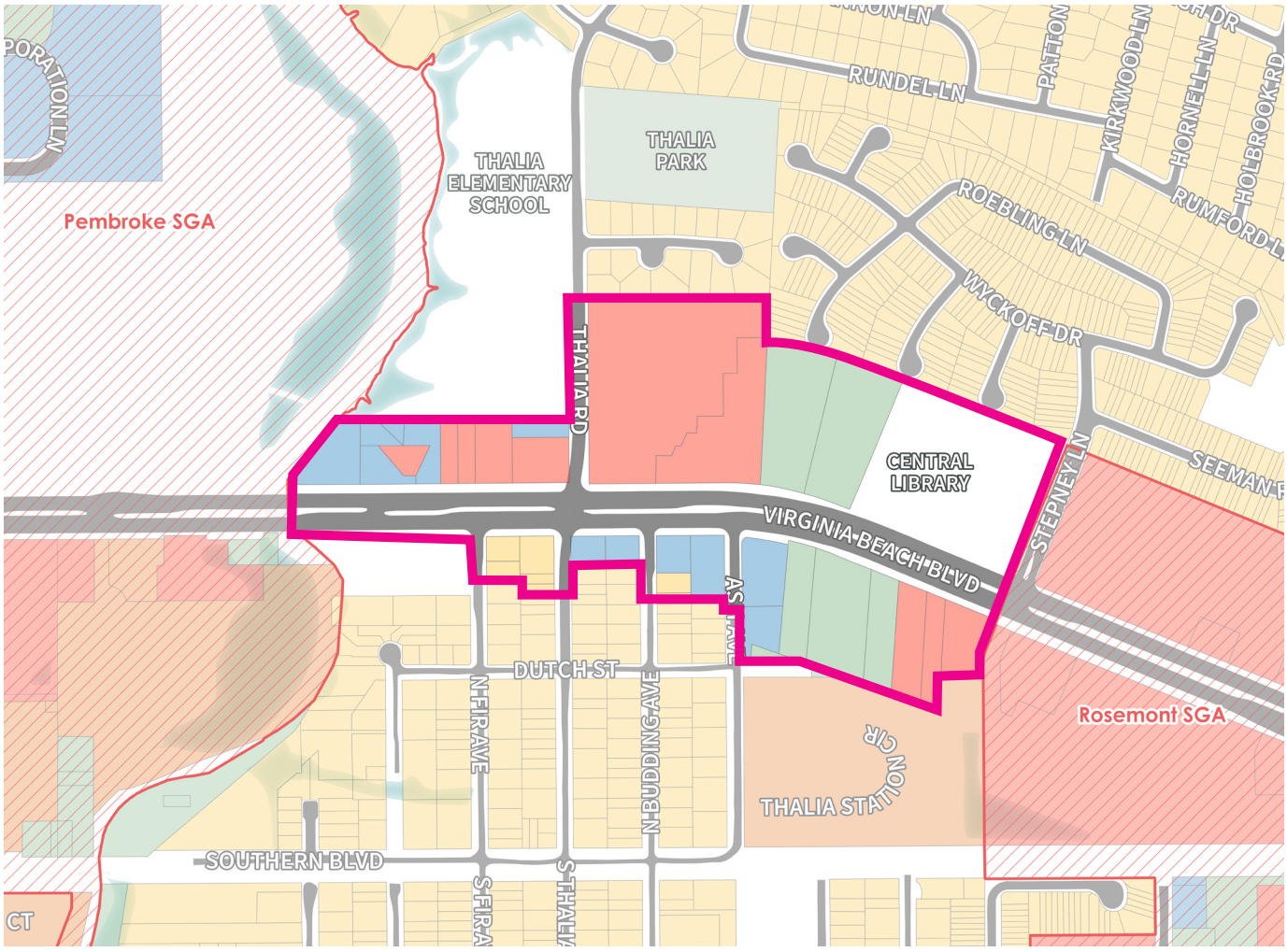
This commercial area benefits from being surrounded by several institutional uses, such as libraries, churches, and schools, which are enjoyed by the nearby residents.

Currently, there is only one street that is connected to all of these amenities, Virginia Beach Boulevard, a major east-west thoroughfare. Plans are underway to bring another, pedestrian-oriented thoroughfare to this area, designed for recreational use by bike, or walking. This path would run parallel to Southern Boulevard.

The residential neighborhoods consist of either apartments or single-family homes. Most single-family homes are detached, but there are several examples of townhouses and duplexes in the area as well. Common cladding materials are brick and vinyl siding. There are a few structures with E.I.F.S or stucco remaining.

All public roads here are designed with preference to facilitating vehicular access. Every road has a surface paved for cars and few have paved surfaces for walking or other modes of transport. Wherever pedestrians and vehicles share a paved surface, the design favors vehicular movement over pedestrian. An example would be a painted crosswalk over asphalt, as opposed to a raised crossing or continuous sidewalk.

As this area develops, so should the public and private pedestrian infrastructure. Creating more biking/walking connections between the existing attractions and any planned ones, will reduce traffic congestion and commute times for local residents, commuters, and shoppers.

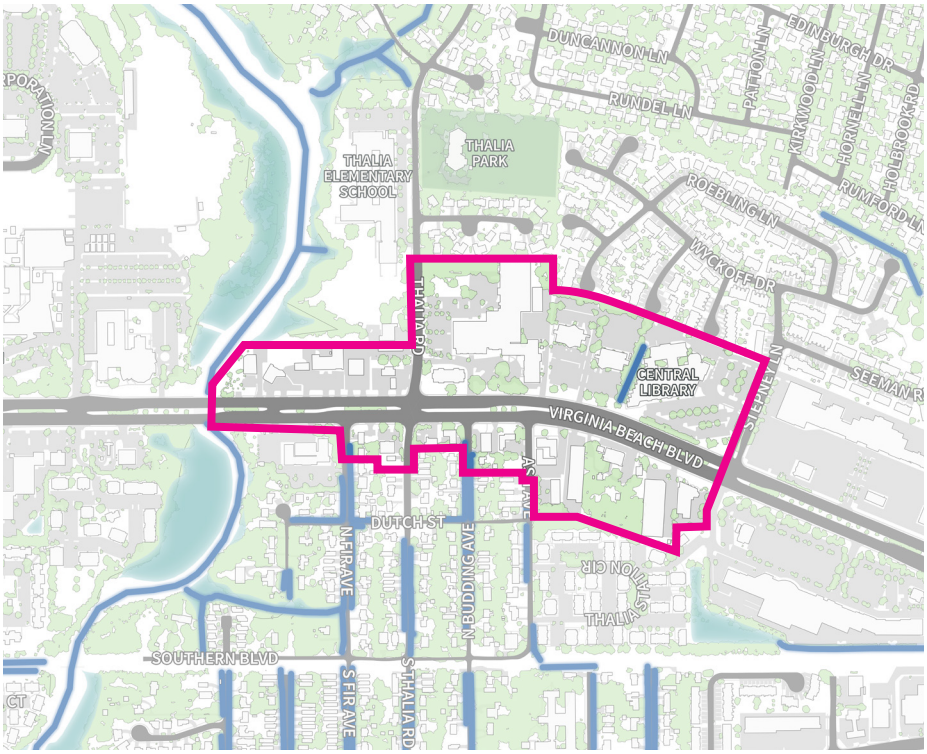


INLAND STUDY AREA: PEMBROKE TO ROSEMONT

EXISTING CONDITIONS

Street Network

The commercial area here is at the nexus of two styles of development. The parcels to the north of Virginia Beach Boulevard are arranged in a suburban character of winding streets and cul-de-sacs, while The southern area is a connected grid of streets.



Environmental Conditions

This area of Virginia Beach benefits from several clusters of mature trees and lush parks. The southern street network incorporates ditches that connect to Thalia Creek to the west.

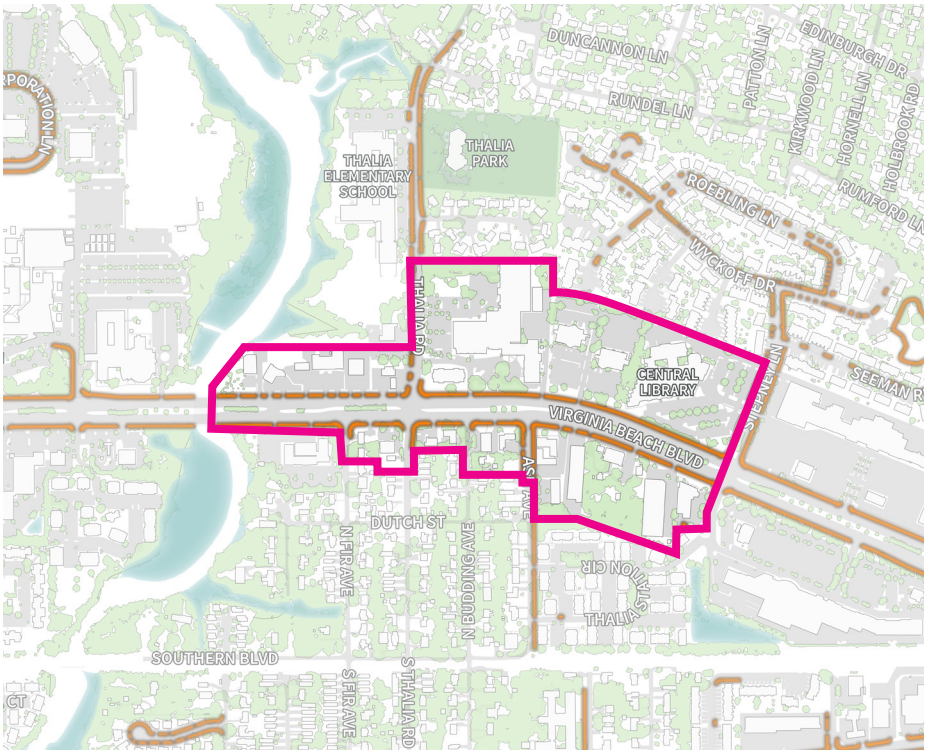
Parking Conditions

Parking is provided by surface lots in the commercial area. In the residential areas it is provided by driveways. All of the light gray on the map to the right represents parking areas
The blue highlighted areas in the map to the right represent sidewalks. The light gray indicates paved areas designed for vehicles.

Neighborhood Access

The commercial areas north of Virginia Beach Boulevard must be accessed via that boulevard, Stepney Lane or Thalia Road. All of these streets offer paved paths for pedestrians and vehicles. The commercial areas have sidewalks as well, but pedestrians must walk through drive aisles to get from the sidewalks on the public right-of-way to the sidewalks on individual parcels.

The commercial areas south of Virginia Beach Boulevard are easily accessed by vehicles along all connecting streets. For pedestrians, there are no direct paved paths to the commercial area.



INLAND STUDY AREA: PEMBROKE TO ROSEMONT

EXISTING CONDITIONS

Most buildings in the commercial area are one-two stories in height with very few areas of two story height. There is no maximum height requirement, except when a commercial structure is within 100' of a residentially-zoned parcel.

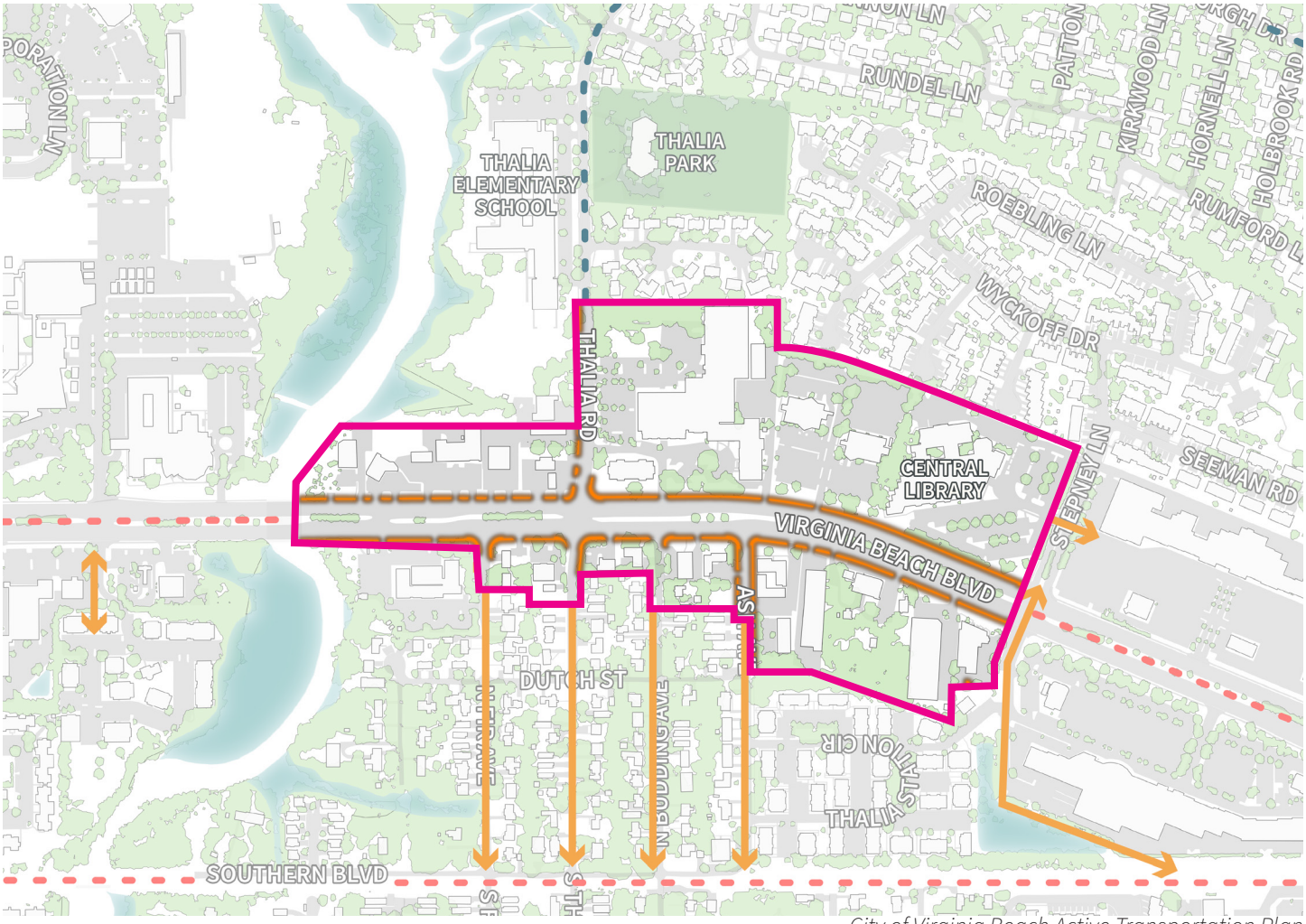
All public roads here are designed with preference to facilitating vehicular access. Every road has a surface paved for cars and few have paved surfaces for walking or other modes of transport.

INLAND STUDY AREA: PEMBROKE TO ROSEMONT

IMPROVED CONNECTIONS

The vision for the Pembroke to Rosemont commercial area is to build upon the natural beauty of the nearby Thalia Creek and planned public trails. A kayak launch in the study area on Thalia Creek is becoming an amenity to the area. The existing pattern is to access each seperate commercial property from the main road by car. The typical development pattern will need to be altered to accomodate more visitors come to this area.

New commercial developments should connect to bike paths, sidewalks, and share-use paths. The planned multi-use path along Southern Boulevard will bring families, tourists, cyclists, and runners to areas of Virginia Beach that they have yet to explore. Increasing connections to this path of adventurers reduces the likelihood of any one connection becoming too crowded in the near future.



City of Virginia Beach Active Transportation Plan

Existing Facilities

- Shared Use Paths
- Conventional Bike Lanes (On Road)
- Sidepaths
- Nature Trails
- Recreational Loop

Proposed Facility Type (Current)

- Shared Use Path
- Protected Bike Lane
- Bike Lane
- Sidepath

INLAND STUDY AREA: PEMBROKE TO ROSEMONT

NEIGHBORHOOD COMPATIBILITY

The commercial area here benefits from being surrounded by several public institutions. There are two schools, elementary and high school. As well as a library and church with a day school adjacent.

Currently, there is only one street that is connected to all of these amenities. That's the major thoroughfare of Virginia Beach Boulevard that connects to the oceanfront. Plans area underway to bring another major thoroughfare to this area, with a design oriented towards pedestrians recreational use . This path would run parallel to Southern Boulevard.

As infrastructure in this area develops, more connections should be made between the existing assets and any planned ones.

INLAND STUDY AREA: PEMBROKE TO ROSEMONT

NEIGHBORHOOD COMPATIBILITY

The existing neighborhoods surrounding this commercial area are zoned for residential use. Often there are mature trees of over 30 feet in height that act as a buffer between residential and non-residential uses. These residential areas are composed of single-family detached homes, attached townhomes, and condominium apartment developments.

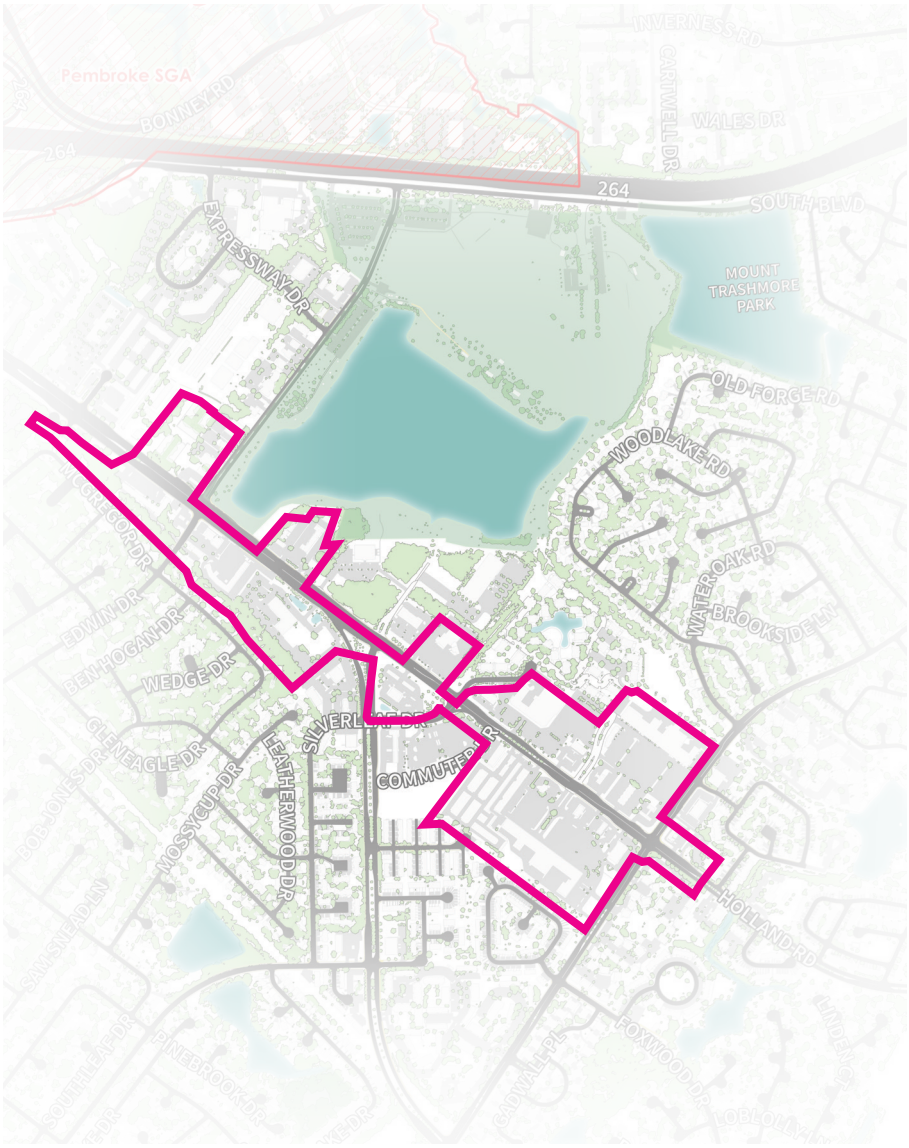
The homes are one to two stories in height, with sloped roofs. They use traditional building materials such as brick, horizontal siding, wood railings and asphalt shingles. Most homes don't have a fenced in front yard, but many have a fenced in back yard.

Developments adjacent to existing residential areas should be designed so as to preserve the private nature of the existing backyards in the residential areas. Effective methods are screening with evergreen trees, and limiting heights within 100 feet of adjacent residential parcels.

INLAND STUDY AREA: HOLLAND TO INDEPENDENCE

OVERVIEW

The vision for the Holland Road and S Independence area includes a medium-density residential neighborhood and commercial village surrounding Mt. Trashmore Park. Park access should be improved by a network of street connections, with new commercial centers to complement the commercial corridors that are reconfigured to create a more continuous development pattern of multi-story buildings that accommodate residential, commercial, and office uses



DESIGN PRINCIPLES

This commercial area has experienced significant changes in and around it since the creation of Mt . Trashmore Park. This includes the development of the Town Center district to the north and an increasing population of residents along Holland Road.

Mt. Trashmore Park has received investment over the years and remains a well-loved attraction by local families and visiting tourists. The central location of this area within Virginia Beach, along with it's proximity to the future Bow Creek Stormwater Park and family amenities, have led to the recent construction of luxury apartment developments here.

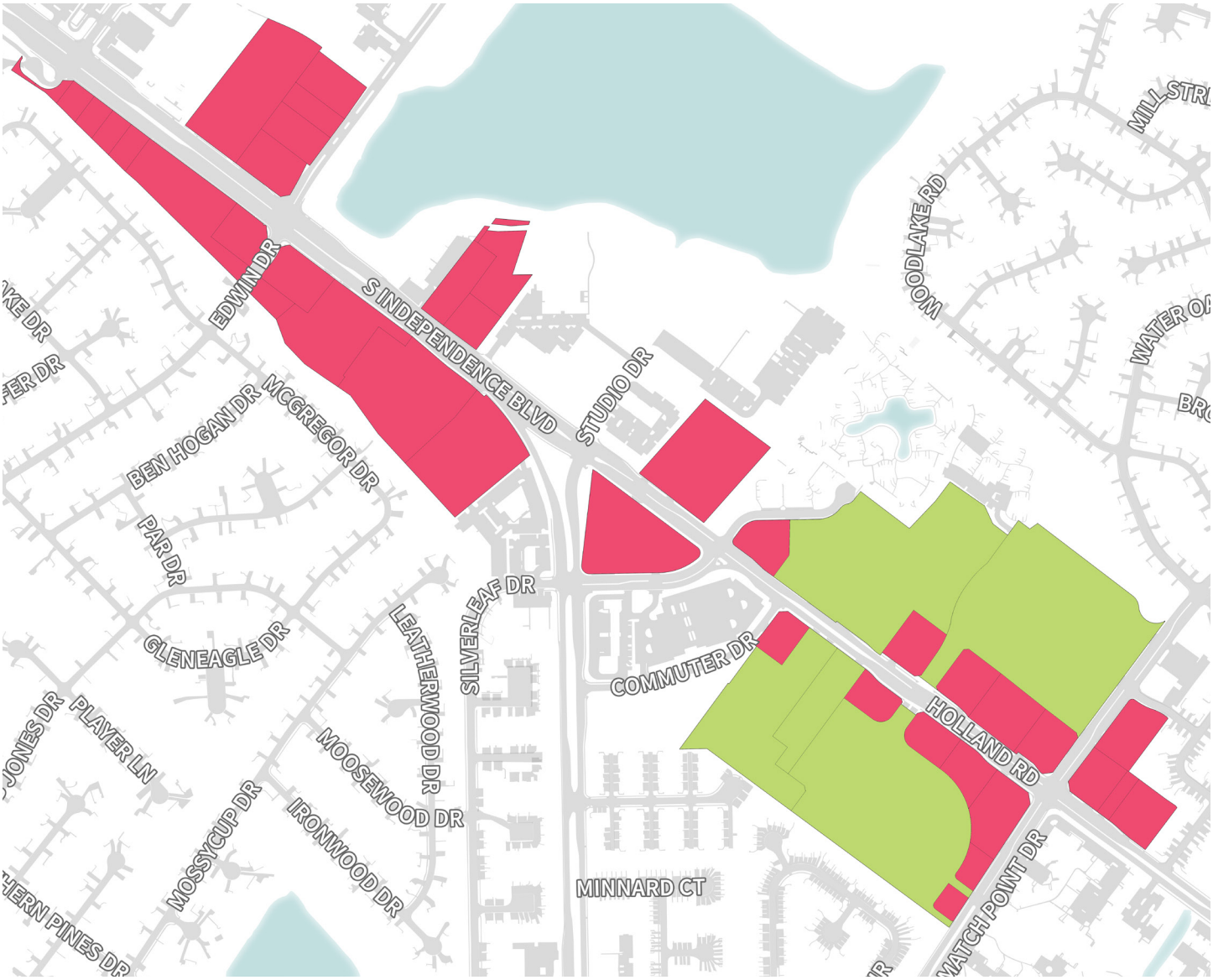
There are significant opportunities for economic development resulting from being close to interstate, parks and shopping. New commercial development designed as part of this network should incorporate trails and paths that extend the park benefits to the shopping experience of the commercial areas.

GOALS

- Develop a medium density commercial and residential village beside the lake, offering housing options in close proximity to the surrounding commercial and employment centers.
- Holland Road corridor is redeveloped with commercial, traditional office, multi-family residential, or a mix of these uses to expand development opportunities that can accommodate market changes without compromising development quality.
- Improve access to biking, walking, and driving connections to link these areas and diffuse traffic from the main arterials.

INLAND STUDY AREA: HOLLAND TO INDEPENDENCE

SITE SCALES



DESIGN PRINCIPLES

This Commercial Area is located along the north-south thoroughfare of S Independence Boulevard as it transitions to Holland Road. There is an entrance to Mt. Trashmore Park at one end of the commercial area and two strip mall style parcels of a medium size at the other end of the commercial area. In between the two ends of this study area are a combination of smaller retail parcels and a couple apartment complexes.

The recent apartment complexes have been developed with trails that connect to Mt Trashmore Park, extending the benefits of a park to the residents. Commercial Areas here should include trails and paths that offer a seamless walking/biking experience from park to home to storefront.

INLAND STUDY AREA: HOLLAND TO INDEPENDENCE

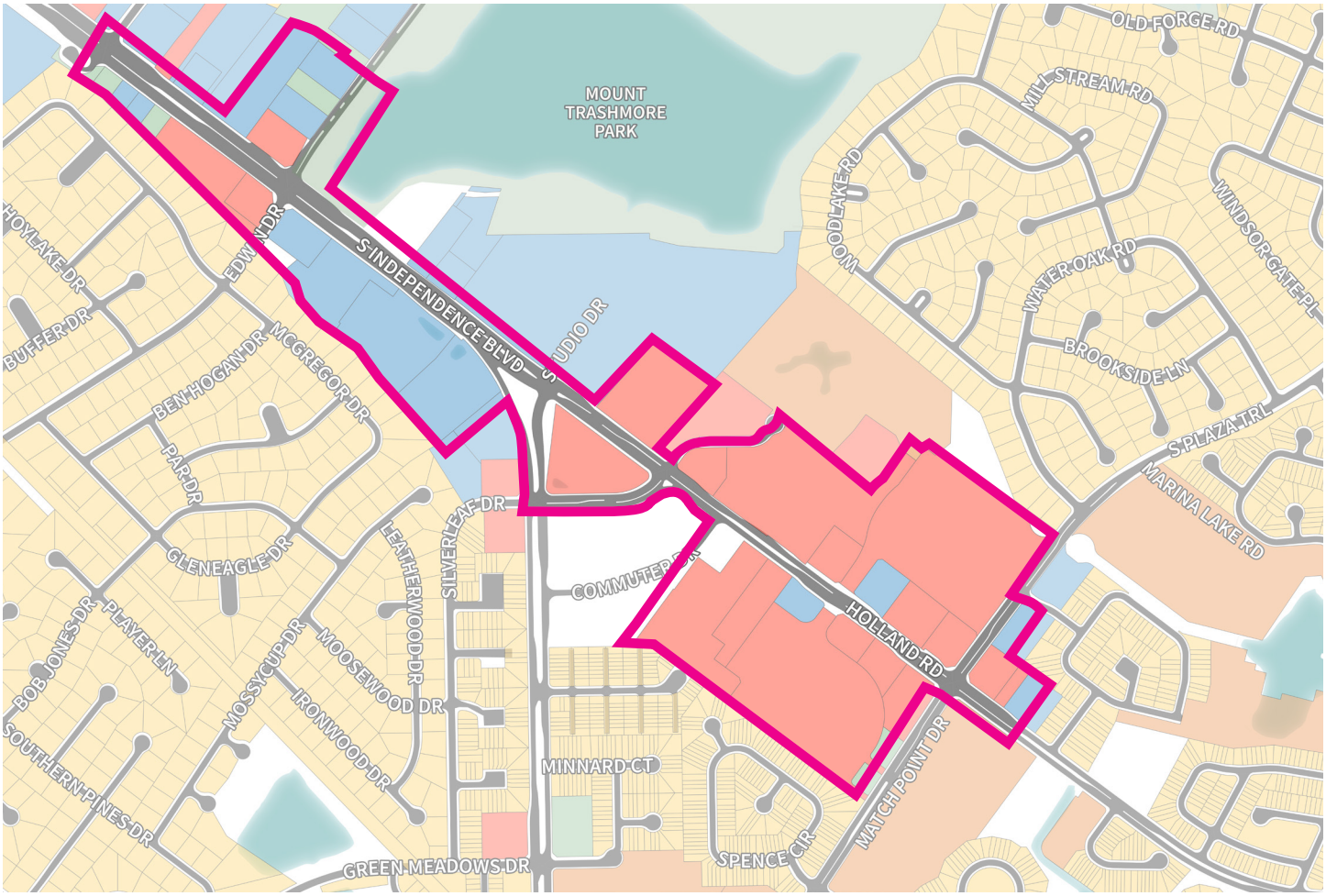
EXISTING CONDITIONS

This area benefits from the success of Mt. Trashmore Park over the past several decades. Continuous investment in the park has created a neighborhood attraction that is family-oriented and open to the general public. The three major roads that are within this commercial area are S Plaza Trail, S Independence Boulevard and Holland Road.

All three roads can be followed to new residential developments including multi-family apartments, town homes, condos, and single-family homes. There are also well established communities of homes. As these residents commute to and from their homes, they are likely to pass this commercial area that lies just a couple miles south of the interstate entrance at Independence Boulevard.

This area is attractive to businesses seeking vehicular traffic, close interstate access, and a large customer base. Currently many outparcels offer drive-through food pick-up, with shopping at individual stores within strip malls to the rear of the property. Between the strip malls and the outparcels there are parking lots with few designated places for pedestrians to walk or rest in between shopping trips.

Most commercial properties here have been designed with two entrances, often one on a main public road and the other on an interior road or secondary public road. Older developments tend to have this entrance designed for vehicular use, while newer developments incorporate sidewalks at both entrances. The most successful designs have pedestrian paths that continue to the building's main entrance with painted crosswalks wherever they persons may be traveling in the same space vehicles may drive.

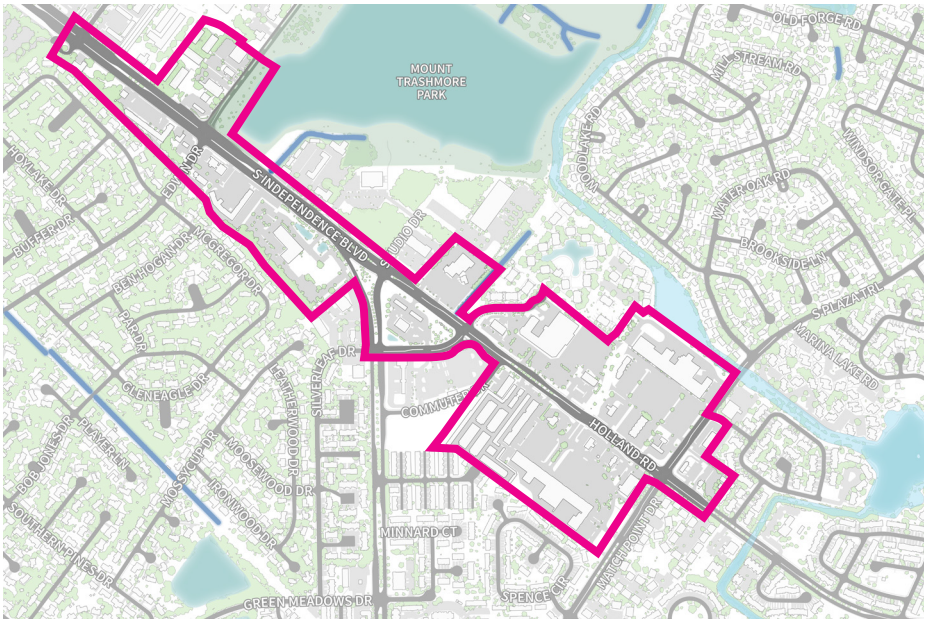


INLAND STUDY AREA: HOLLAND TO INDEPENDENCE

EXISTING CONDITIONS

Street Network

The commercial area here is at a fork in the road where Independence Boulevard continues south and Holland Road extends to the east There is an internal street network between the apartment complexes and shopping centers north of Holland Road.



Environmental Conditions

This area of Virginia Beach is fairly low and is susceptible to flooding during major storm events. As a result, stormwater management practices are commonly used here and will continue to remain important features of the built environment in this area.

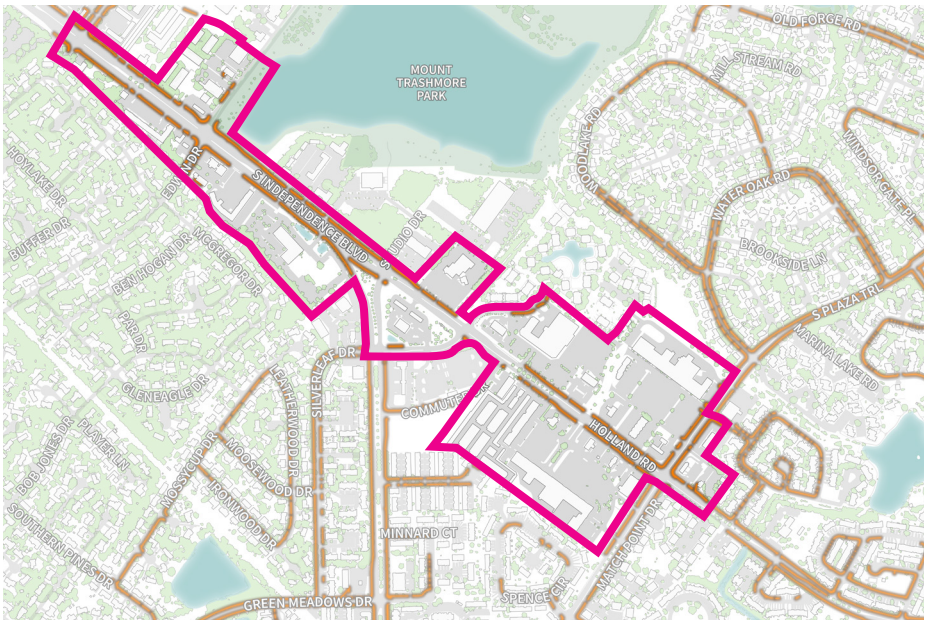
Parking Conditions

Parking is provided by surface lots in the commercial area. In the residential areas it is provided by driveways.
All of the light gray on the map to the right represents parking areas
The orange highlighted areas in the map to the right represent sidewalks. The light gray indicates paved areas designed for vehicles.

Neighborhood Access

The apartments directly along Holland Rd are well connected to shopping on that same side of the street. Pedestrians currently have to cross drive aisles without crosswalks and developments should incorporate painted crosswalks in the future as a safe design practice.

Neighborhood access may be improved on both sides of Holland Rd by the addition of more designated pedestrian paths with recreational amenities such as benches, bike racks, trash cans, and canopy trees for shade.

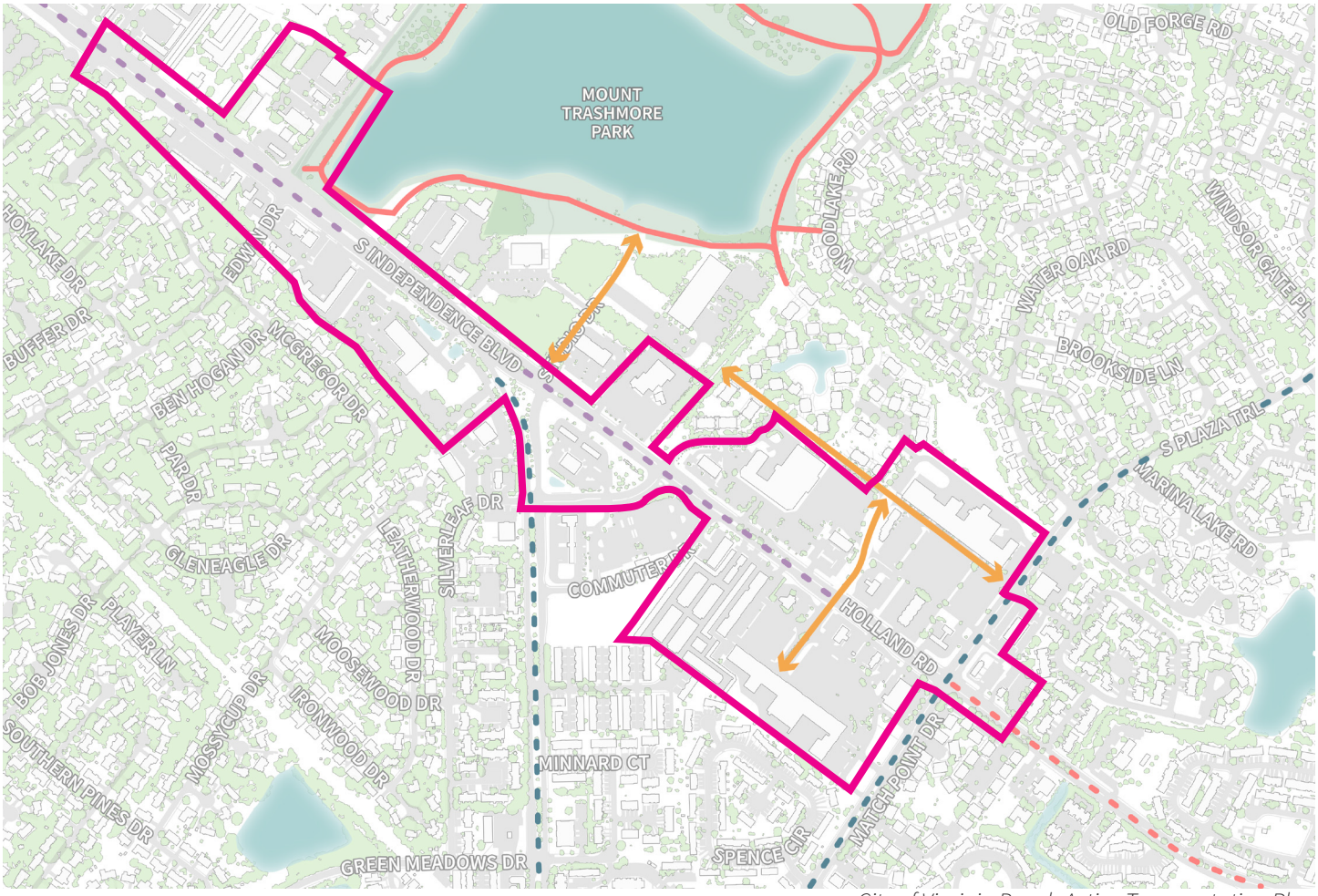


INLAND STUDY AREA: HOLLAND TO INDEPENDENCE

IMPROVED CONNECTIONS

This area has seen an increase in number of visitors as population has grown in the surrounding area. The regional Mt. Trashmore Park to the north attracts a significant amount of visitors that use the trails and other park features. Currently, there is one direct route from the park to the commercial study area here via S Independence Boulevard/Holland Road.

In an attempt to reduce the vehicular traffic burden of Holland Road new developments should create a continuous network of trails that connect to the Park. The City of Virginia Beach has plans for improving pedestrian infrastructure on all the major public roads in this area. This creates the opportunity for a park visitor to leave their car in the parking lot and then walk to a nearby convenience store or restaurant and then walk back without adding to traffic.



City of Virginia Beach Active Transportation Plan

Existing Facilities

- Shared Use Paths
- Conventional Bike Lanes (On Road)
- Sidepaths
- Nature Trails
- Recreational Loop

Proposed Facility Type (Current)

- Shared Use Path
- Protected Bike Lane
- Bike Lane
- Sidepath

INLAND STUDY AREA: HOLLAND TO INDEPENDENCE

NEIGHBORHOOD COMPATIBILITY

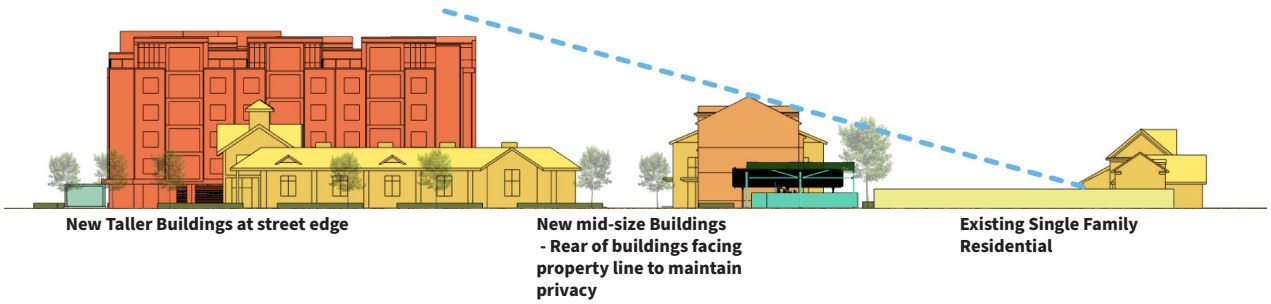
The existing neighborhoods surrounding this commercial area are zoned for residential use. Often there are mature trees of over 30 feet in height that act as a buffer between residential and non-residential uses. These residential areas are composed of single-family detached homes, attached town homes, and apartment developments.

The rear of many commercial properties in this area border the yards of private homes. In addition to mature trees separating commercial from residential uses there are often fences and drainage ditches making the commercial area distinct and separate from the residential developments. Newer development trends often mix these two uses to increase the market base that the commercial areas have.

New commercial developments adjacent to residential areas should be designed to preserve the private nature of the existing backyards in the residential areas. Effective methods are screening with evergreen trees and limiting building heights within 100 feet of adjacent residential parcels. Below is an example of how tree screening should be used as a buffering method for buildings up to four stories in height.

Commercial parcels with access to Holland Road and S Plaza Trail should place entrances with sidewalks for pedestrians on each of those main streets. The same principle should be applied for other developments that can be accessed by two or more public roads. Ensuring there is vehicular access and pedestrian access from major roads helps to reduce congestion at any singular entrance or road.

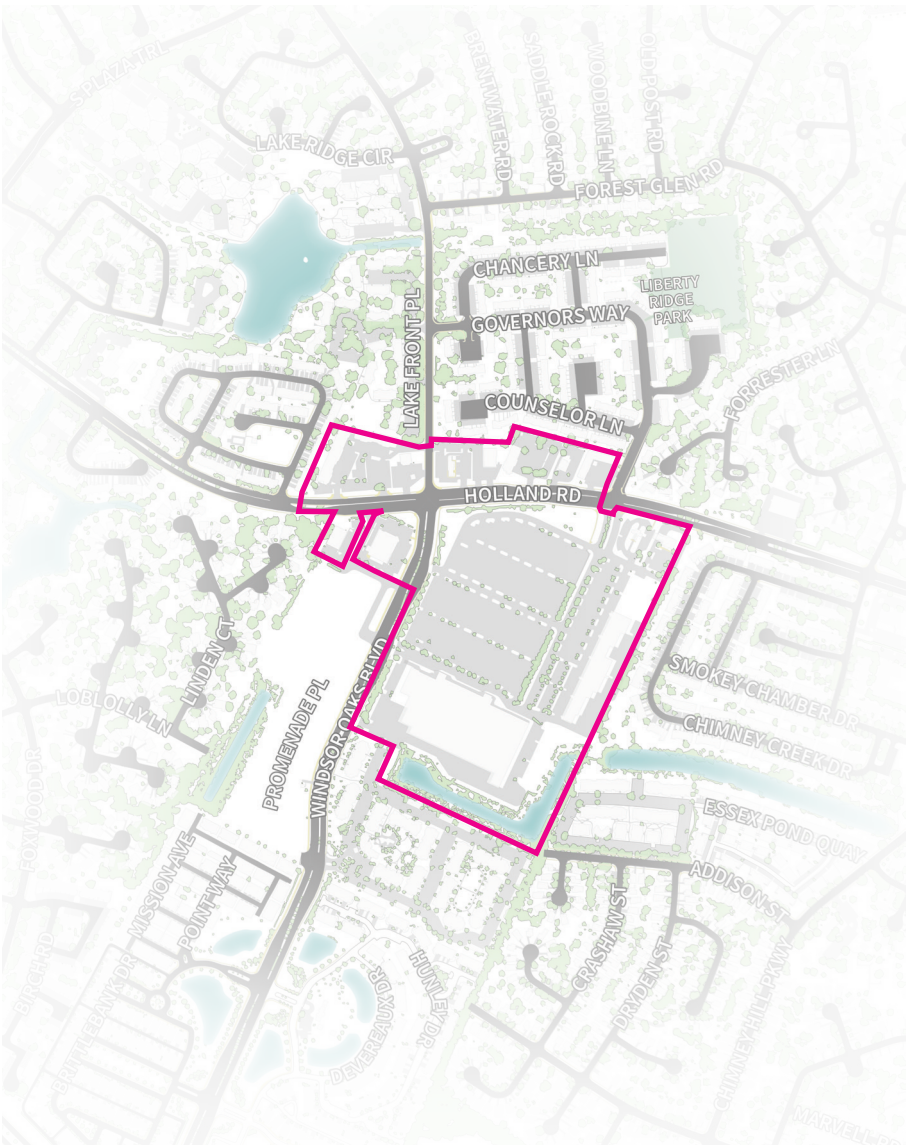
Once buildings exceed 4 stories in height, they appear in stark contrast to the existing residential community of homes. If buildings taller than 4 stories are proposed by developers they should be oriented as far away from existing residential homes as possible, close to the main street. Additionally, there should be buildings of an intermediate height between existing single family homes as shown in the graphic below.



INLAND STUDY AREA: HOLLAND & WINDSOR OAKS

OVERVIEW

The vision for the Holland - Windsor Oaks neighborhood serving commercial area includes a medium density residential and neighborhood commercial village, an expanded network of pedestrian connections, new commercial and office uses to support the continued residential development in the region, and commercial corridors reconfigured to create a more continuous development pattern of multi-story buildings accommodating residential, commercial, and office uses.



DESIGN PRINCIPLES

Provide shorter pedestrian connections from residential developments immediately adjacent to the commercial core.

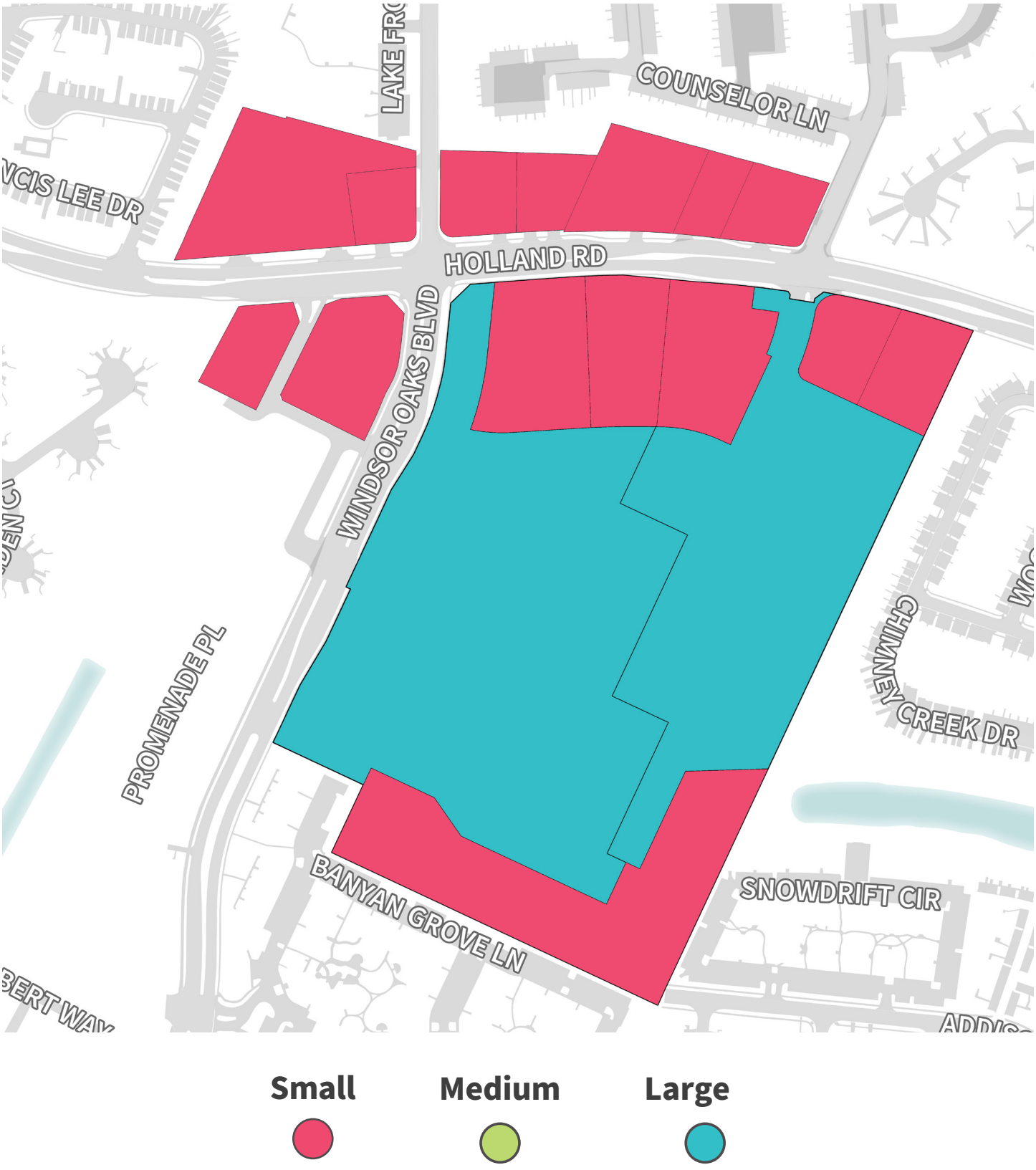
The existing commercial and residential uses support each other well and mixing these uses in the future will improve the mutually beneficial adjacency of uses. The addition of office uses to the area would be beneficial.

GOALS

- Design a commercial core along the corridors of Windsor Oaks Boulevard and Holland Road for a mixture of residential, office, and commercial uses that are connected by a series of multi-use paths to the immediately adjacent uses.
- Incorporate additional uses on the parcel that supports the residents.
- Increase stormwater capacity through the use of creative green infrastructure to slow, store, and drain stormwater. Limiting the amount of traditional impervious pavement in vehicle occupied areas should be a priority.

INLAND STUDY AREA: HOLLAND & WINDSOR OAKS

SITE SCALES



INLAND STUDY AREA: HOLLAND & WINDSOR OAKS

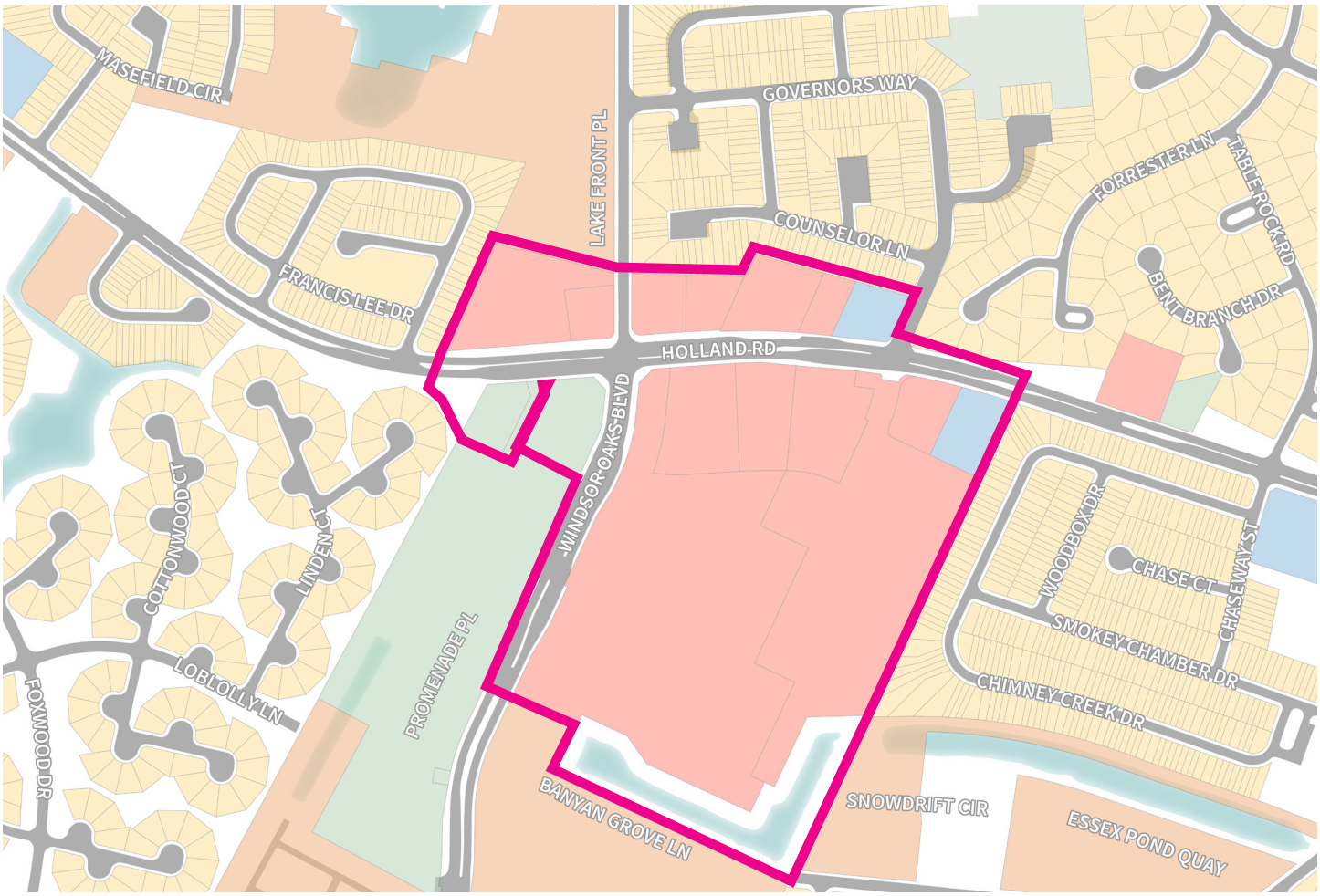
EXISTING CONDITIONS

This Neighborhood Serving commercial core, at the intersection of Windsor Oaks Boulevard and Holland Road, is surrounded by single-use residential developments. The commercial area has seen an increase in development with a new multifamily complex constructed across the street from the commercial parcels shown below in the salmon tone. The commercial is located at the intersection of a couple major roads. There are residential uses surrounding the commercial area.

Most residential developments have backyards adjacent to the commercial development and separated with a buffer of fencing, trees, or a combination of both. New residential developments have aligned their entrances with existing commercial entrances to increase the capacity for vehicular traffic flow. These entrances are aligned over main roads of 4-6 lanes in width.

The distance to cross roads, combined with no crosswalk or indicator of pedestrian traffic makes walking to the commercial area an uncomfortable and dangerous experience. These intersections should be examined for potential crosswalks, yield signs, stop signs, and lighted traffic signals to facilitate safe access for vehicles and pedestrians alike.

Some residences feature a continuous sidewalk or trail network, others have clubhouses or internal residential amenities. These amenities rarely connect to adjacent commercial developments.

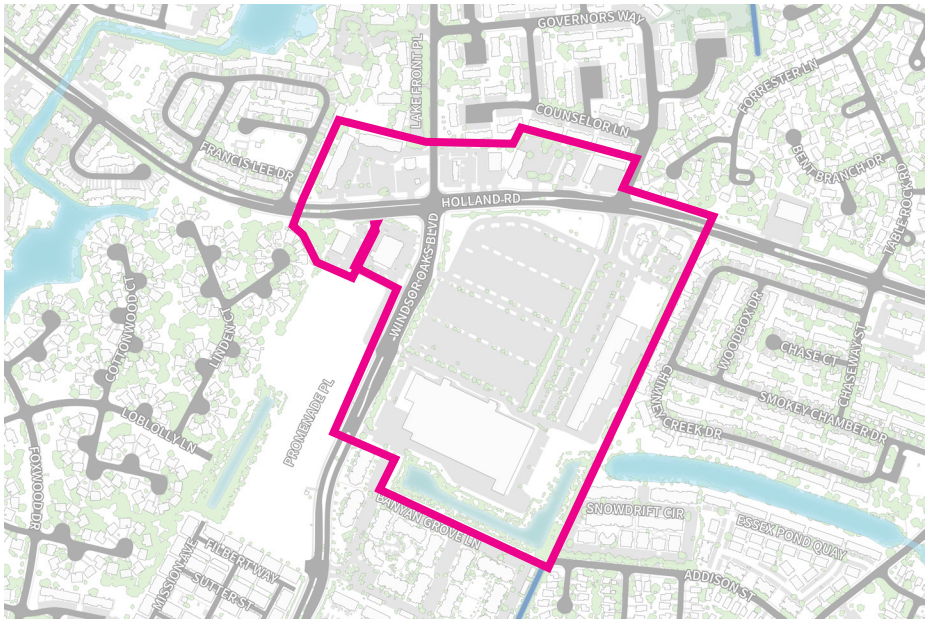


INLAND STUDY AREA: HOLLAND & WINDSOR OAKS

EXISTING CONDITIONS

Street Network

The street network in the residential communities surrounding the commercial is designed in the cul-de-sac model, with most developments being accessed via the closest main public roads



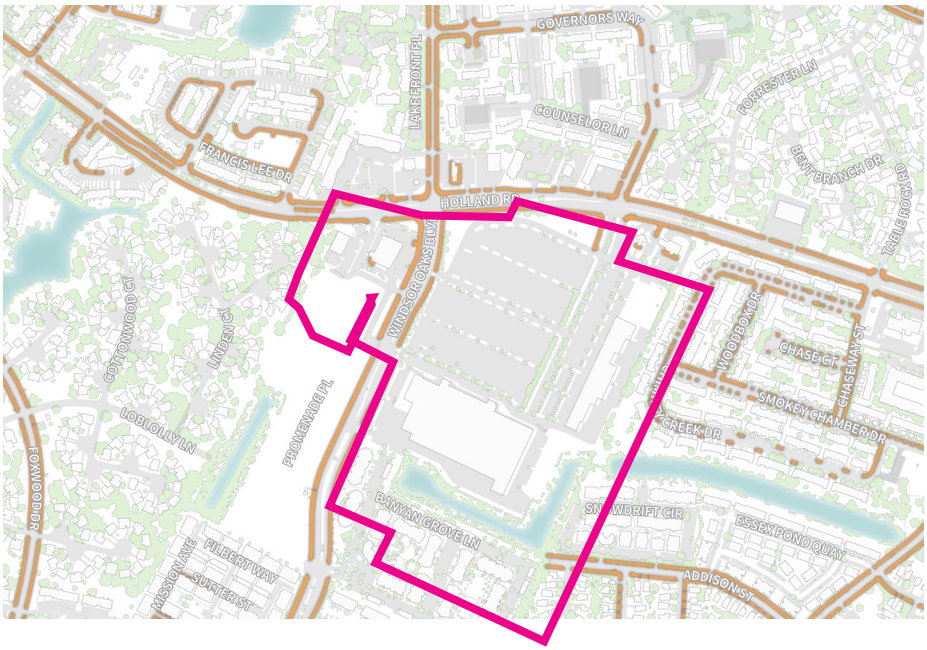
Environmental Conditions

This area is susceptible to localized flooding during large storm events. New developments will need to incorporate stormwater management practices as building requirements have adapted to address recurrent flooding.

Parking Conditions

Parking is provided by surface lots in the commercial area. In the residential areas it is provided by driveways. All of the light gray on the map to the right represents parking areas

The orange highlighted areas in the map to the right represent sidewalks. The light gray indicates paved areas designed for vehicles.



Neighborhood Access

Neighborhood access to this commercial area happens via the main roads. Current conditions have a service road and natural buffer between neighborhoods and the rear of commercial parcels.

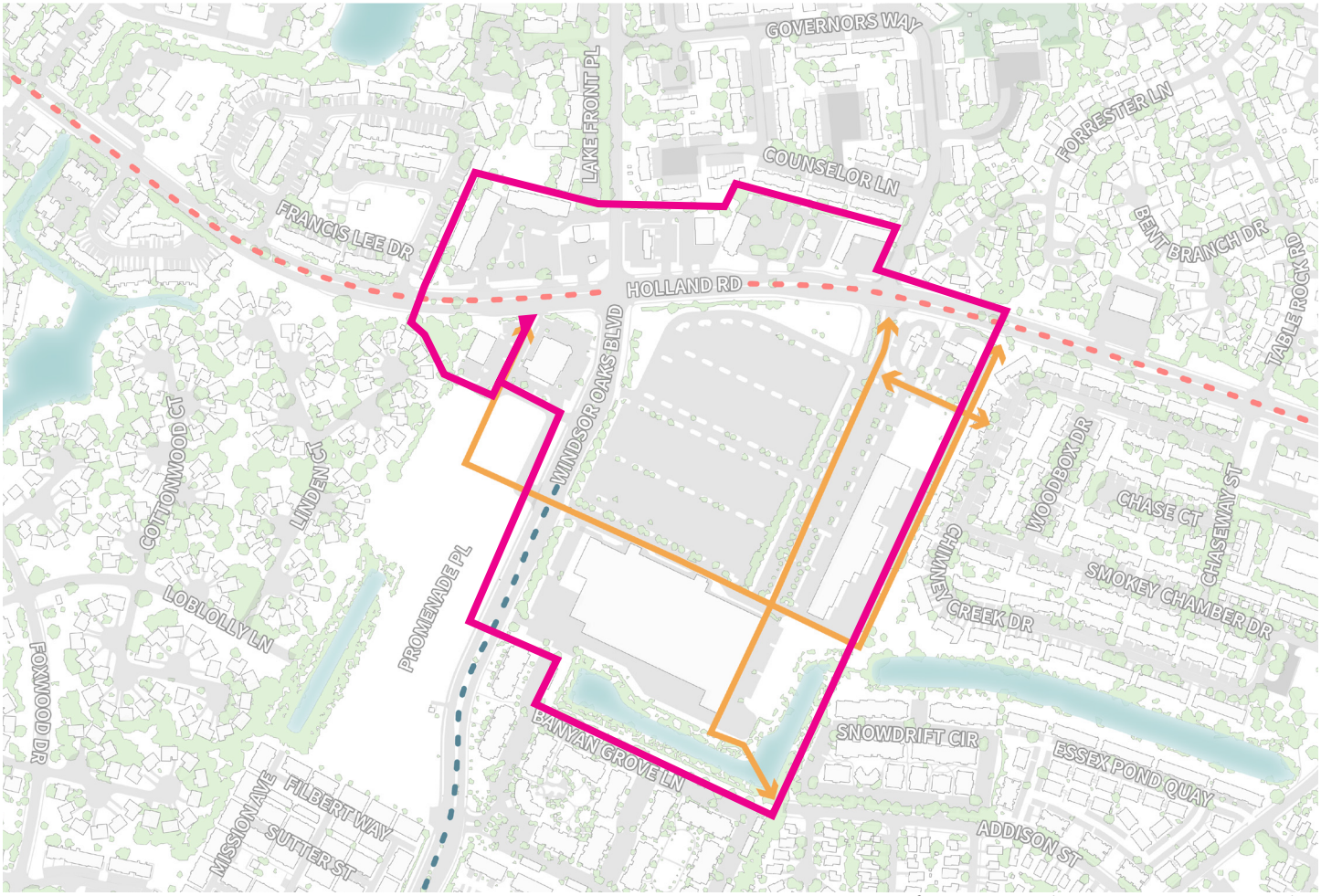
There is a good sidewalk network along public roads here, but most homes were developed with their backyard facing these sidewalks. For privacy and security, most homeowners have a fence and must walk around the neighborhood to the public sidewalk, which is often less convenient than traveling by car.

INLAND STUDY AREA: HOLLAND & WINDSOR OAKS

IMPROVED CONNECTIONS

The City of Virginia Beach has adopted plans that suggest improving the infrastructure of the area to include bike lanes and shared use paths. Where commercial developments align with these new pedestrian improvements they should construct continuous pedestrian paths that are connected to the front of each business.

The rear of many commercial properties here have stormwater management features or planted buffers separating them from adjacent residential parcels. These areas are perfect places to place pedestrian amenities. Adequate lighting should be placed along these paths in commercial areas for safety.



City of Virginia Beach Active Transportation Plan

Existing Facilities

- Shared Use Paths
- Conventional Bike Lanes (On Road)
- Sidepaths
- Nature Trails
- Recreational Loop

Proposed Facility Type (Current)

- Shared Use Path
- Protected Bike Lane
- Bike Lane
- Sidepath

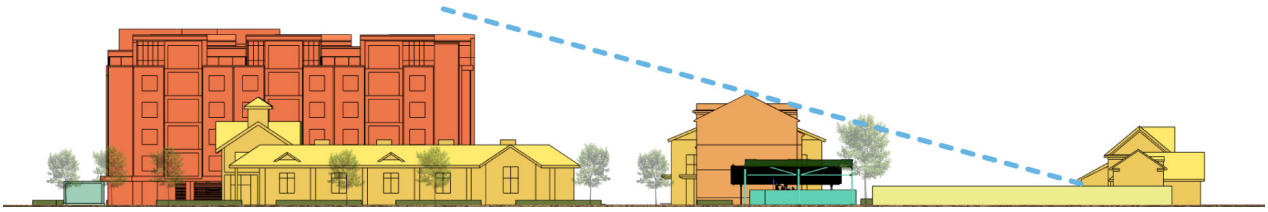
INLAND STUDY AREA: HOLLAND & WINDSOR OAKS

NEIGHBORHOOD COMPATIBILITY

The existing neighborhoods surrounding this commercial area are zoned for residential use. Often there are mature trees and stormwater features that act as a buffer between residential and non-residential uses. These residential areas are composed of single-family detached homes, attached town homes, and apartment developments.

The rear of many commercial properties in this area border the yards of private homes. In addition to mature trees separating commercial from residential uses there are often fences and drainage ditches making the commercial area distinct and separate from the residential developments. Newer development trends often mix these two uses to increase the market base that the commercial areas have.

New commercial developments adjacent to residential areas should be designed to preserve the private nature of the existing backyards in the residential areas. Effective methods are screening with evergreen trees and limiting building heights within 100 feet of adjacent residential parcels. Below is an example of how tree screening should be used as a buffering method for buildings in this area.



There exists a healthy network of wide pedestrian streets and paths in this area. Most of these paths are located along public roads, with smaller paths located within separate developments. There is currently a lack of continuous connection between these two types of paths.

New commercial development should provide an experiential benefit to adjacent residents by constructing paths that connect residential trails to businesses and public trails.

EXAMPLE IMAGES

AICUZ CHARACTER AREA

OVERVIEW

AICUZ Character Areas are those commercial corridors which lie within an Accident Potential Zone (APZ) or Noise Contour of the Air Installations Compatible Use Zone, also known as AICUZ, established around Naval Air Station Oceana.

These zones limit the uses and density of development in order to maintain the safety and quality of life of communities that are close to military air bases.

Key Elements

Commercial developments in the AICUZ Character Area are most commonly restaurants, auto-services, warehouses, or offices. They are typically separated from adjacent parcels by natural features or constructed barriers, especially when adjacent to residential uses.

The example image below shows a residential development next to a restaurant, shopping center, and warehouse department store with no direct access due to landscaped areas and a constructed pond to manage stormwater. This landscaped buffer should be designed as a walkable park, to connect to existing parcels whenever possible. This alternate mode of access can reduce travel times and vehicular congestion in the AICUZ area as new developments are built.

AICUZ CHARACTER AREA

PEDESTRIAN CONNECTIONS

Shopping centers and retail establishments should offer attractive, inviting pedestrian scale features, spaces, and amenities.

These include, but are not limited to:
- parks
- playgrounds
- shade structures
- tables
- seating
- bike storage
- fitness areas

All such features and community spaces shall connect to internal or public walkways and, if present, to the bikeway network, and shall be constructed of materials of at least equal quality to that of the principal materials of the building and landscape.

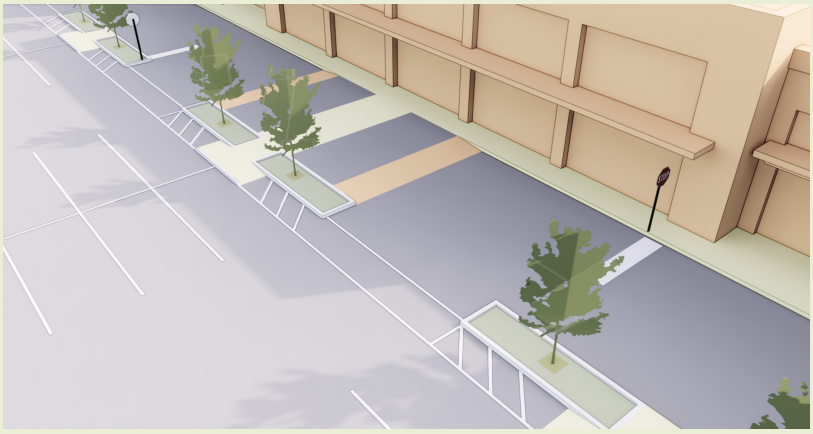
Pedestrian walkways shall provide access from the parking area to the primary building in such manner that pedestrians using walkways will be required to traverse the vehicular parking aisle to the minimum extent possible.

Walkways should be anchored by special design features such as towers, arcades, porticos, pedestrian light fixtures, planter walls or other architectural elements that define circulation ways and outdoor spaces. Walkways shall be landscaped and be readily distinguishable from driving aisles where they traverse such aisles through the use of durable, low-maintenance surface materials such as pavers, bricks, scored concrete or similar architectural treatments.

The AICUZ area business uses are often vehicular-oriented, industrial, or warehousing spaces. These uses require the operation of motorized vehicles, so there should be a clearly designated pedestrian path to reduce the potential for accidents.

SMALL LOT - 300’ DEEP PROPOSED

MEDIUM LOT - 600’ DEEP PROPOSED

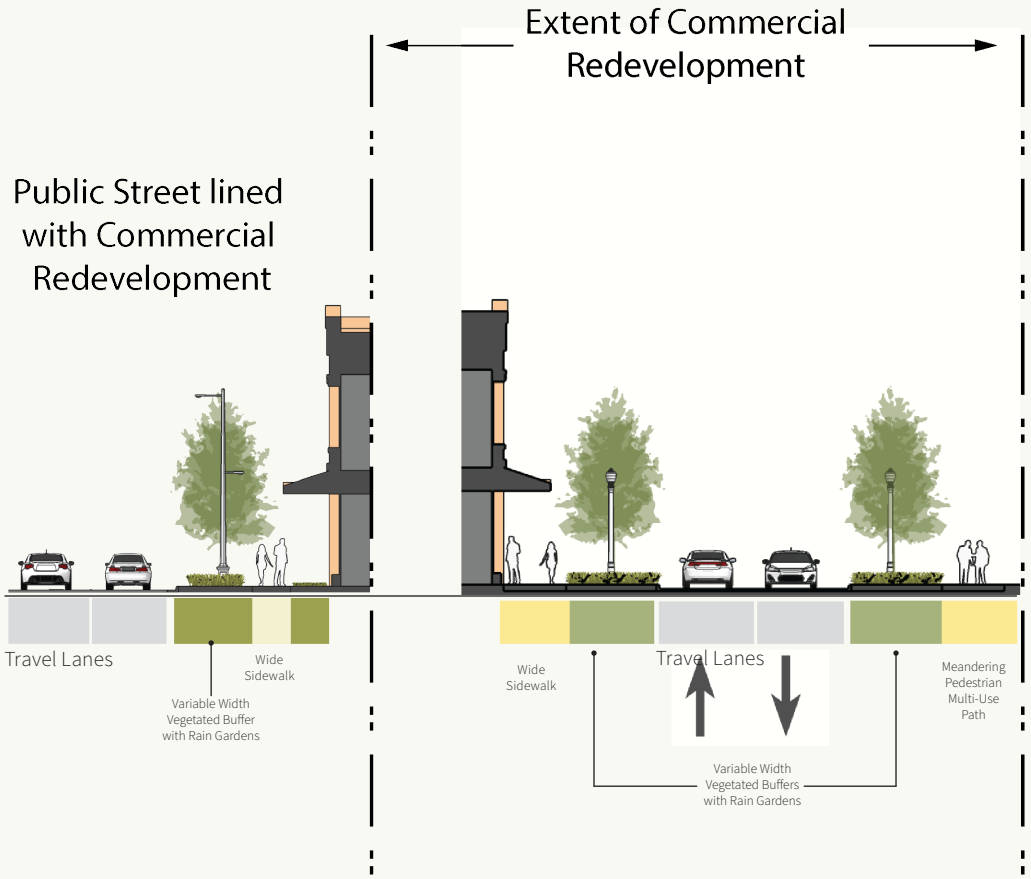


PARKING WITH DESIGNATED PEDESTRIAN CROSSINGS

AICUZ CHARACTER AREA

STREETSCAPE IMPROVEMENTS

PROPOSED - STREET SECTION



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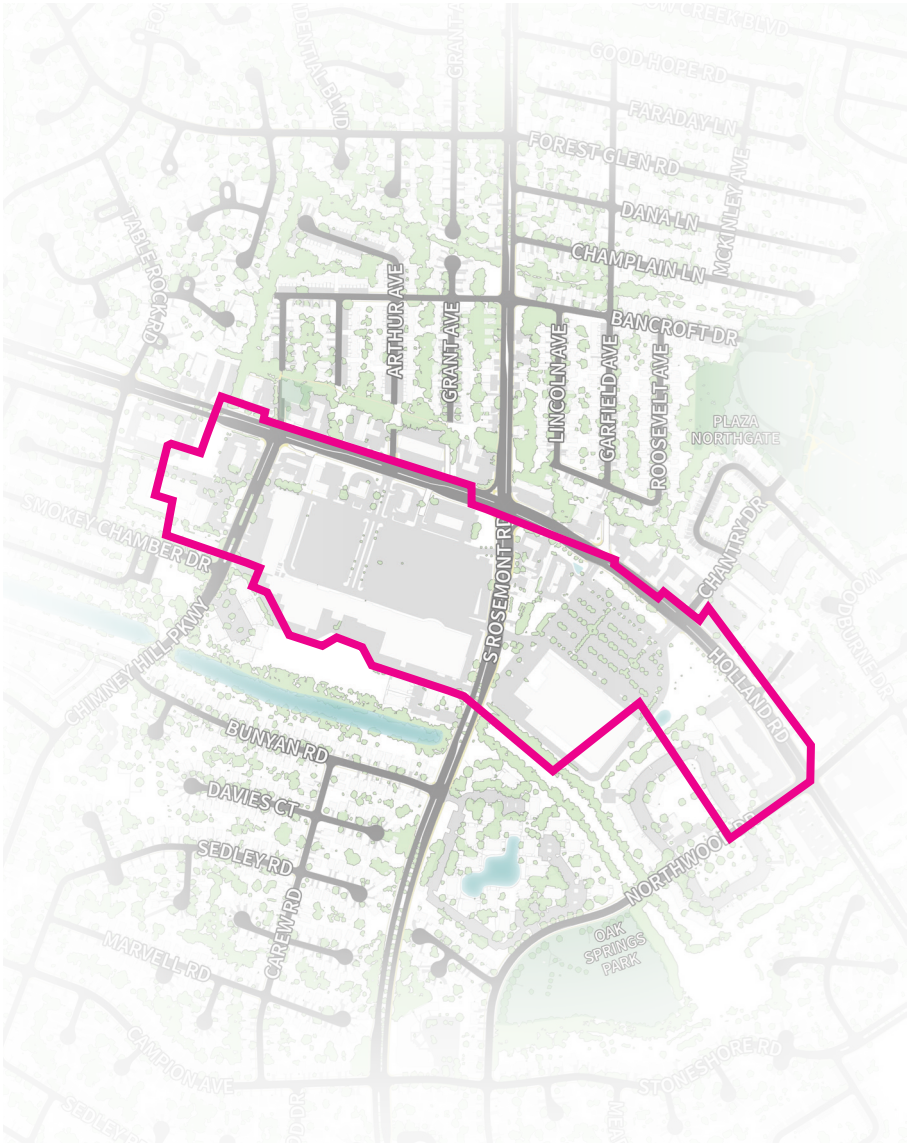
AICUZ STUDY AREA: HOLLAND & ROSEMONT

OVERVIEW

The vision for this commercial area includes a medium density residential and commercial neighborhood village, and an expanded network of street and pedestrian connections to create a more continuous development pattern of multi-story buildings accommodating residential and commercial uses.



DESIGN PRINCIPLES

This commercial area is surrounded residential communities. There is a moderately well-connected street grid on which there are many single family homes, attached townhomes, and a few apartment complexes.

Most residential developments feature cul-de-sac style roads. These types of developments result in private yards lining the main roads. Many developments and homeowners elect to build a fence for privacy.

In order to maintain a balance of privacy and access to commerce, commercial developments should align their entrances with adjacent roadways and provide tree-lined streets with sidewalks to connect to the public right-of-way.

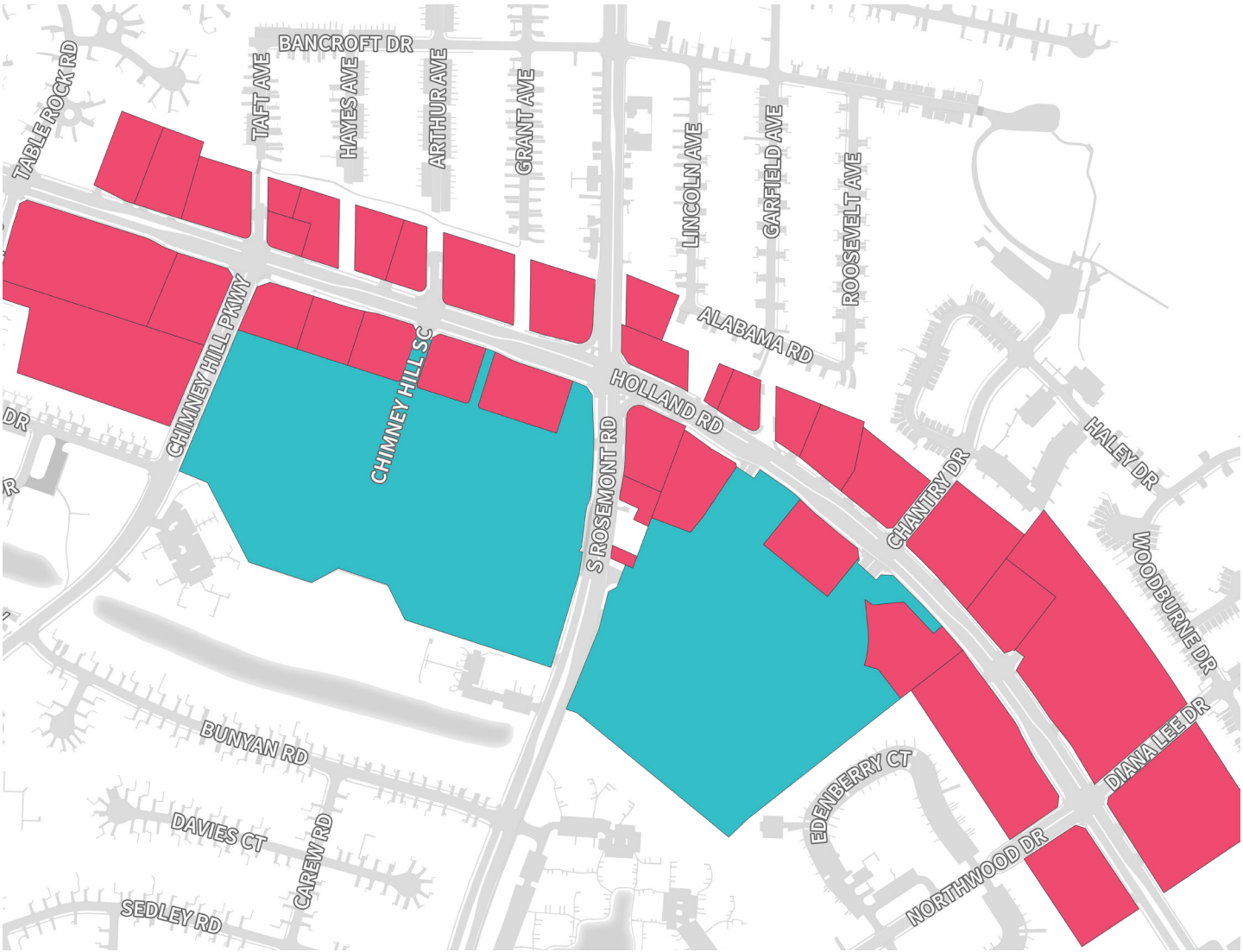
These streets should be lined with building facades, with parking available nearby. This development pattern creates a seamless travel experience for drivers and locals walking. Incorporating these streets with stormwater parks on larger parcels creates an attractive amenity for all visitors to the commercial parcels.

GOALS

- Align commercial entrances with existing street network of surrounding residential developments.
- Create shopping boulevards with tree-lined streets and sidewalks to provide an enjoyable shopping experience by car, bike, or foot
- Create stormwater parks on larger parcels that can be lined with commercial and residential uses and amenities

AICUZ STUDY AREA: HOLLAND & ROSEMONT

SITE SCALES



Small **Medium** **Large**

Most commercial parcels here are smaller parcels accessed via the main road and/or connector roads. Outparcels may have a third access point if there is an internal street between it and the large parcels containing strip mall type development with large anchor buildings.

AICUZ STUDY AREA: HOLLAND & ROSEMONT

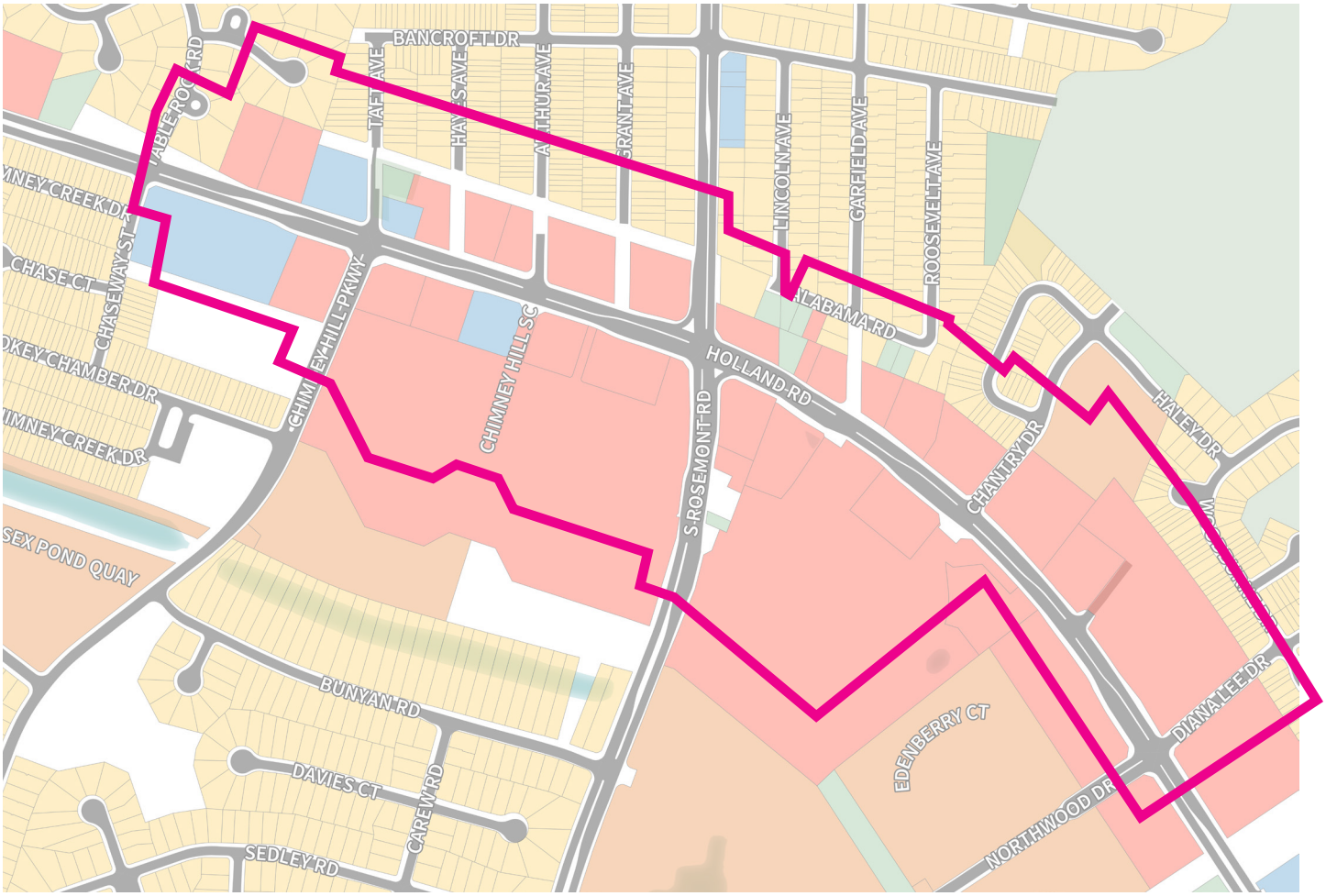
EXISTING CONDITIONS

Small individual commercial developments are located along the major thoroughfares, often utilizing multiple entry points on adjacent streets. Most commercial buildings are surrounded by parking lots and public roads surround the properties. A majority of the public streets have a pedestrian sidewalk network, often lined with trees.

The public sidewalks and the sidewalks at commercial building entrances are typically separated by a parking lot or drive aisle. There are few crosswalks where pedestrians may travel through vehicle parking areas. This makes the walking experience unpleasant, and most people within walking distance travel to the commercial area by car.

The residential areas surrounding this community are well connected with few dead end streets. Residents and commercial properties alike benefit from stormwater management practices such as swales. In addition to the swales, there are tributaries of the Lynnhaven River that border some of the commercial properties. In times of low tide, these will most likely be too shallow to be navigated, but there may be a potential for a kayak launch and other water-related amenities at the eastern edge of this commercial area.

The relatively well-connected street network offers a lot of amenities within driving distance. As this area's population increased, traffic congestion has as well. The city has seen residents becoming comfortable with using biking paths for exercise and nearby shopping. Currently, there are plans to increase the number of shared use paths and bike lanes in the area.



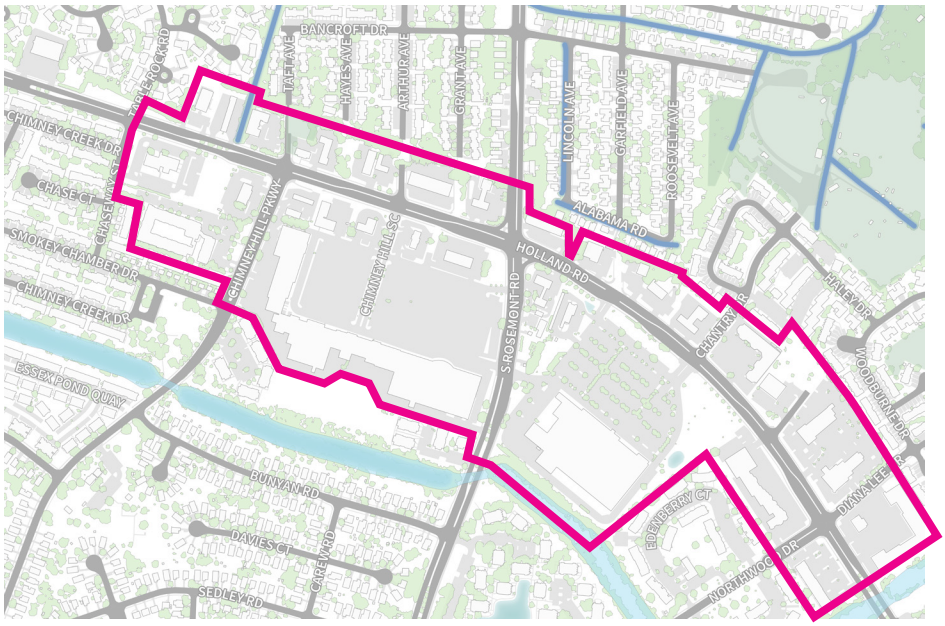
AICUZ STUDY AREA: HOLLAND & ROSEMONT

EXISTING CONDITIONS

Street Network

The street network in the residential communities surrounding the commercial is a well-connected grid pattern.

The street network often abruptly ends at the connection of commercial properties



Environmental Conditions

This area is susceptible to localized flooding during large storm events. Some commercial properties are adjacent to tributaries of the Lynnhaven River.
New developments will need to incorporate stormwater management practices as building requirements have adapted to address recurrent flooding.

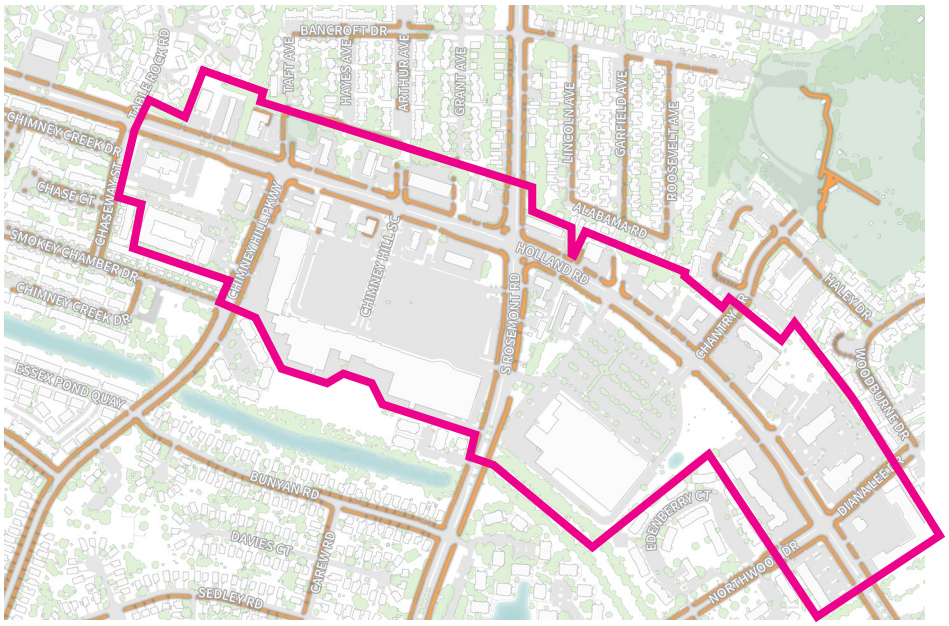
Parking Conditions

Parking is provided by surface lots in the commercial area. In the residential areas it is provided by driveways.
All of the light gray on the map to the right represents parking areas
The orange highlighted areas in the map to the right represent sidewalks. The light gray indicates paved areas designed for vehicles.

Neighborhood Access

Neighborhood access to this commercial area happens via the main roads. Currently, the rear of commercial parcels have a service road and often a natural buffer between neighborhoods and the rear of commercial parcels.

There is a good sidewalk network along public roads here. These sidewalks should be connected to interior sidewalks in commercial properties with painted sidewalks or raised speed tables with visual indicators of pedestrian traffic.

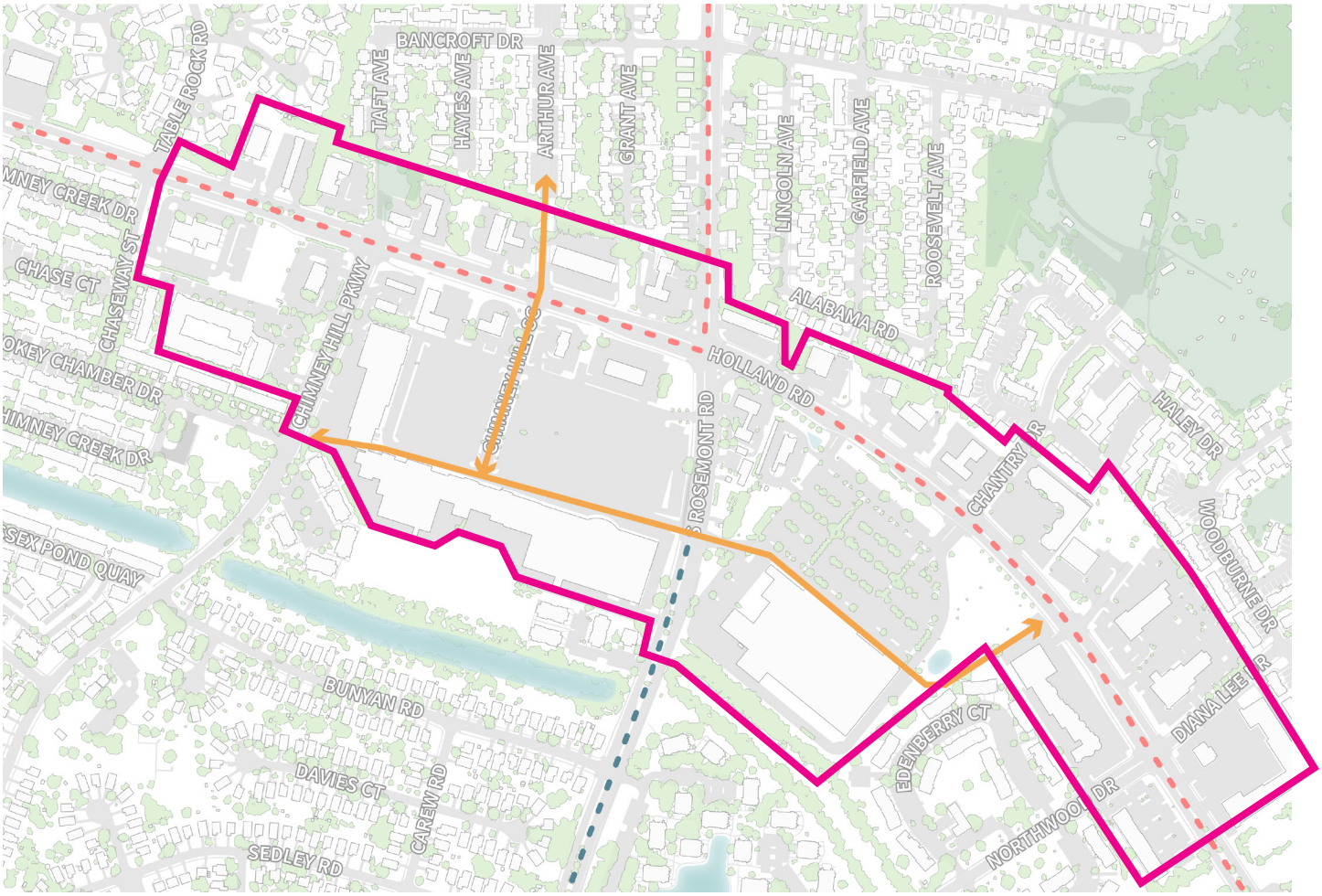


AICUZ STUDY AREA: HOLLAND & ROSEMONT

IMPROVED CONNECTIONS

The city is continuing to invest in the pedestrian infrastructure in this area, with plans to implement a shared use path and bike lane along Holland Rd and S Rosemont Road Commercial developments should construct pedestrian-oriented connections to these streets that allow travelers to enter the commercial area while avoiding the congestion that occurs closest to the intersection of the two major streets here.

Pedestrian connections within the commercial areas should feature visual indicators of pedestrian traffic whenever paths may share space with vehicular traffic areas. These should be a combination of signage and contrasting pavement treatment to alert drivers. Orange arrows below indicate potential paths of connection through the commercial areas.



City of Virginia Beach Active Transportation Plan

Existing Facilities

- Shared Use Paths
- Conventional Bike Lanes (On Road)
- Sidepaths
- Nature Trails
- Recreational Loop

Proposed Facility Type (Current)

- Shared Use Path
- Protected Bike Lane
- Bike Lane
- Sidepath

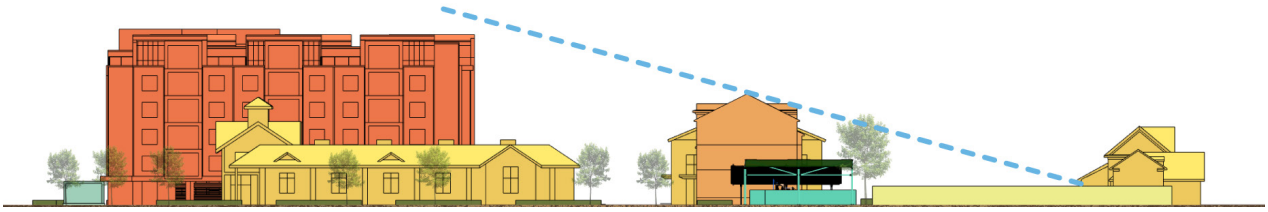
AICUZ STUDY AREA: HOLLAND & ROSEMONT

NEIGHBORHOOD COMPATIBILITY

The existing neighborhoods surrounding this commercial area are zoned for residential use. Often there are mature trees and water features that act as a buffer between residential and non-residential uses. These residential areas are composed of single-family detached homes, attached town homes, and apartment developments.

The rear of many commercial properties in this area border the yards of private homes. In addition to mature trees separating commercial from residential uses there are often fences and water features making the commercial area distinct and separate from the residential developments. Newer development trends often mix these two uses to increase the market base that the commercial areas have.

New commercial developments adjacent to residential areas should be designed to preserve the private nature of the existing backyards in the residential areas. Effective methods are screening with evergreen trees and limiting building heights within 100 feet of adjacent residential parcels. Below is an example of how tree screening should be used as a buffering method for buildings in this area.



A healthy network of wide pedestrian streets and paths exists in this area. Most of these paths are located along public roads, with smaller paths located within separate developments. There is currently a lack of continuous connection between these two types of paths. Parking lots between public sidewalks and building entrances create an uncomfortable walking experience despite a relatively short distance.

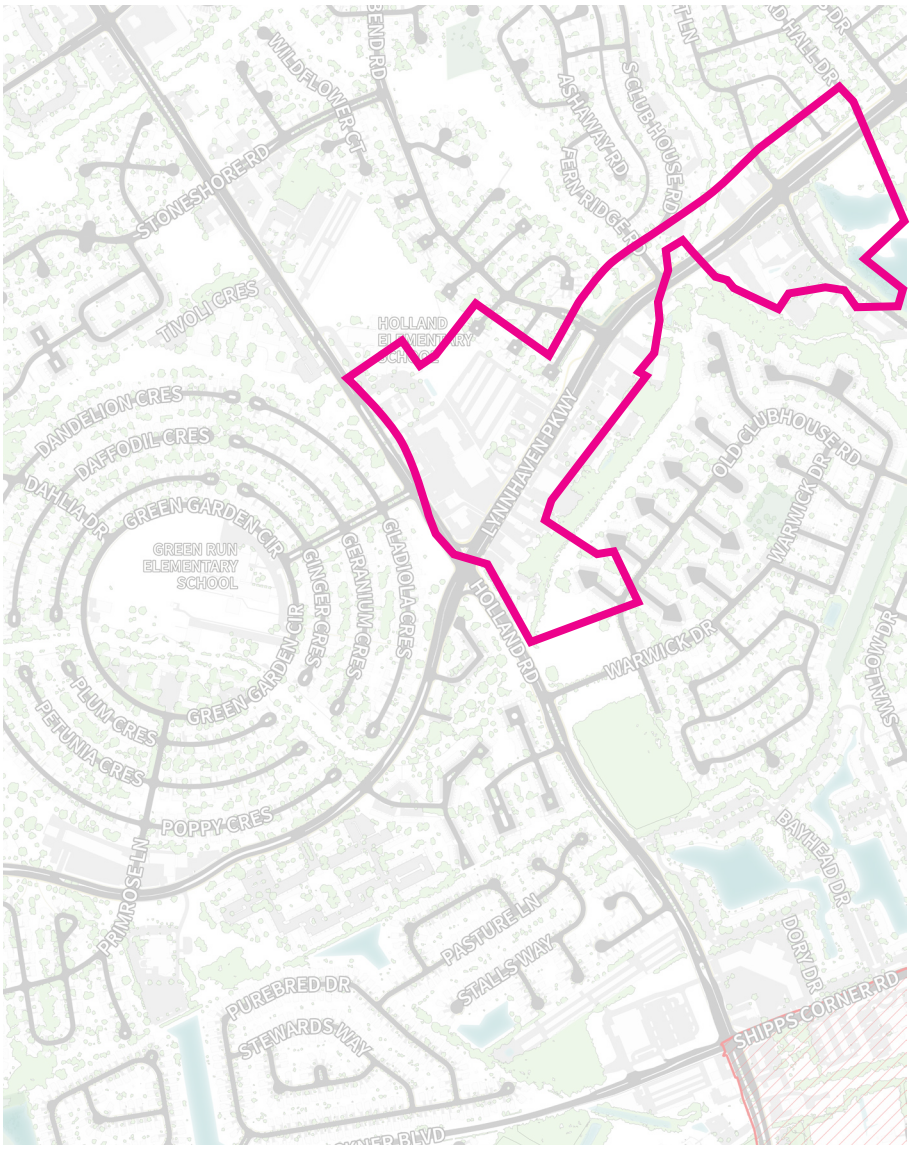
New commercial development can provide and experiential benefit to adjacent residents by constructing paths that connect residential trails to businesses and public trails.

EXAMPLE IMAGES

AICUZ STUDY AREA: HOLLAND & LYNNHAVEN

OVERVIEW

The vision of this area is a series of developments that are in-scale with existing development, along with targeted public infrastructure improvements. The commercial properties closest the intersection of Holland Rd and Lynnhaven Parkway will have the opportunity to transform themselves into higher intensity uses to take advantage of the location outside the limits of the designated Accident Potential Zone (APZ) related to the nearby naval facility. At the edge of the commercial area, lower intensity development is envisioned to seamlessly connect with local residential neighborhoods.



DESIGN PRINCIPLES

This commercial area is within the APZ, due to its relationship to Oceana Naval Air Station. This limits the amount of residential development that can happen here in the event of an accident.

This commercial area should primarily serve local residents. The local population is steadily increasing and the transportation infrastructure should respond with that growth.

With London Bridge Creek and natural trees lining most of the commercial properties, there is an ability to make a continuous pedestrian trail experience along the tree line of the creek and at the rear of commercial properties.

There should be a focus on enhancing existing connections to the commercial area with pedestrian paths and bike-able trails that benefit local residents. These paths can be constructed alongside stormwater features to provide visual interest and educate the general public on the importance of managing stormwater in this region.

GOALS

- Improving multi-modal connections to convenient retail will strengthen the existing neighborhoods by providing an accessible community service.
- By meeting the Chesapeake Bay Act's mandates to protect and restore the Lynnhaven River, this area should capitalize on the value of the water and marshlands and transform it into a public open space amenity that becomes part of a recreation network.

AICUZ STUDY AREA: HOLLAND & LYNNHAVEN

SITE SCALES

AICUZ STUDY AREA: HOLLAND & LYNNHAVEN

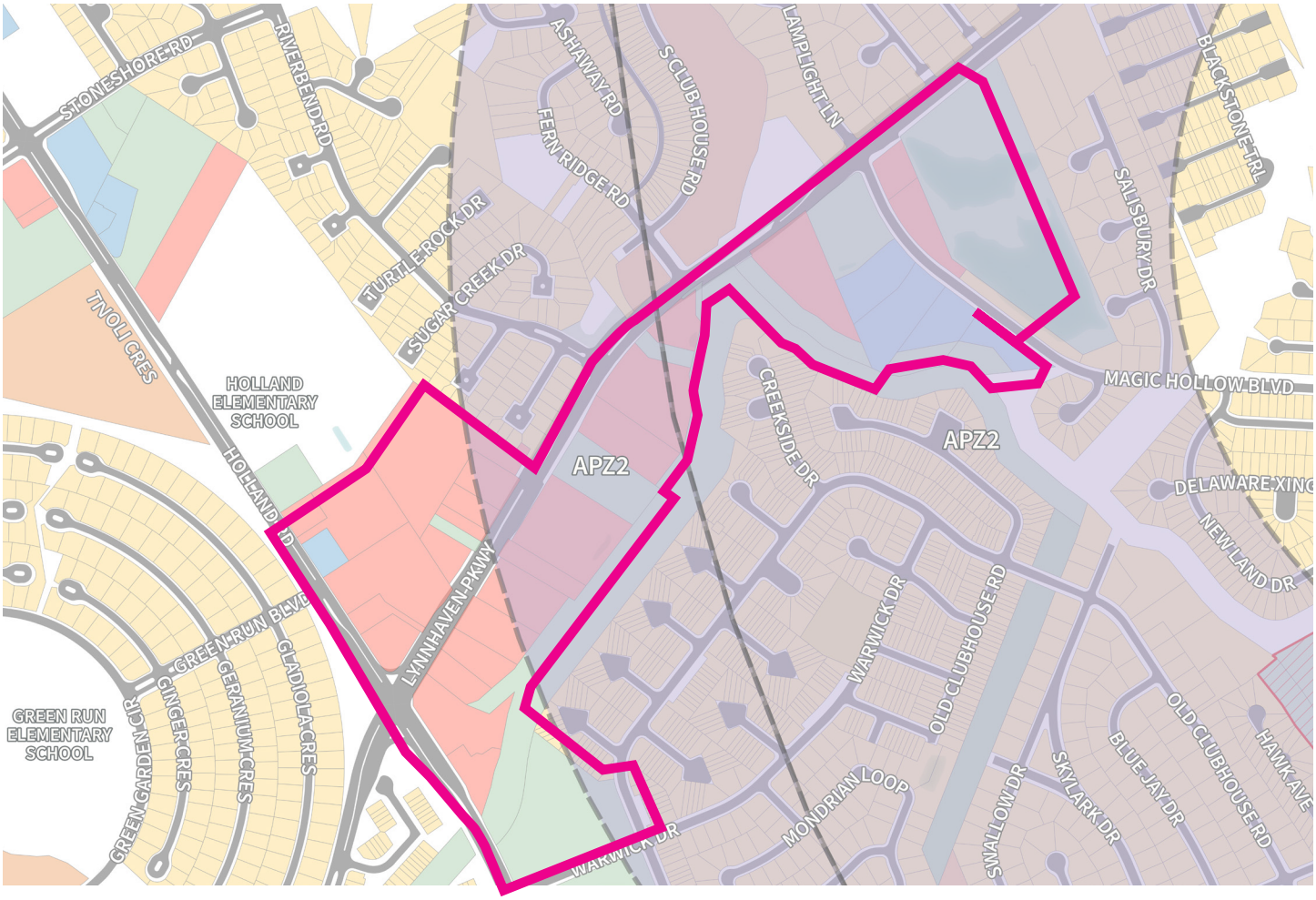
EXISTING CONDITIONS

The development pattern of the commercial areas is impacted by the City's AICUZ requirements. The resulting commercial uses revolve around warehouse uses, restaurants, auto-oriented retail, and other compatible uses. The parcels outside of the APZ zone feature strip malls but have the potential to support denser residential development if rezoned.

The residential communities and commercial areas are both accessed via the same two main roads in this area, Holland Road and Lynnhaven Parkway. These thoroughfares have seen increased congestion recently as the overall area population has increased.

There are several community amenities nearby, such as parks, small lakes and creeks, and multiple elementary schools. This area is attractive for families looking for a single family home in a quiet landscape. Currently the Lynnhaven Mall area receives a moderate amount of visitors, but there are plans in the future to add additional amenities and residents to that area which may increase the traffic along Lynnhaven Parkway.

There have been successful trails constructed nearby in recent history that are separated from major thoroughfares with landscaped verges of about 10 to 20 feet in width. The city of Virginia Beach plans to build upon the success of these trails by adding a bike path and shared use path to Lynnhaven Parkway and Holland Road respectively.



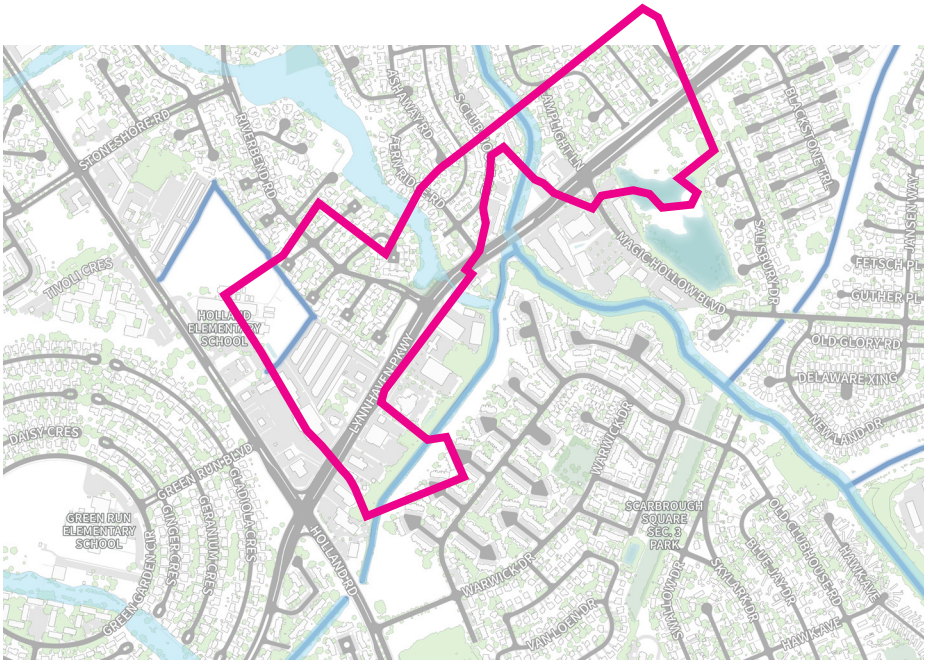
AICUZ STUDY AREA: HOLLAND & LYNNHAVEN

EXISTING CONDITIONS

Street Network

The street network in the residential communities surrounding the commercial area is a cul-de-sac pattern with one or two connections to main roads.

The commercial areas are only connected to the main streets, not neighborhood streets.

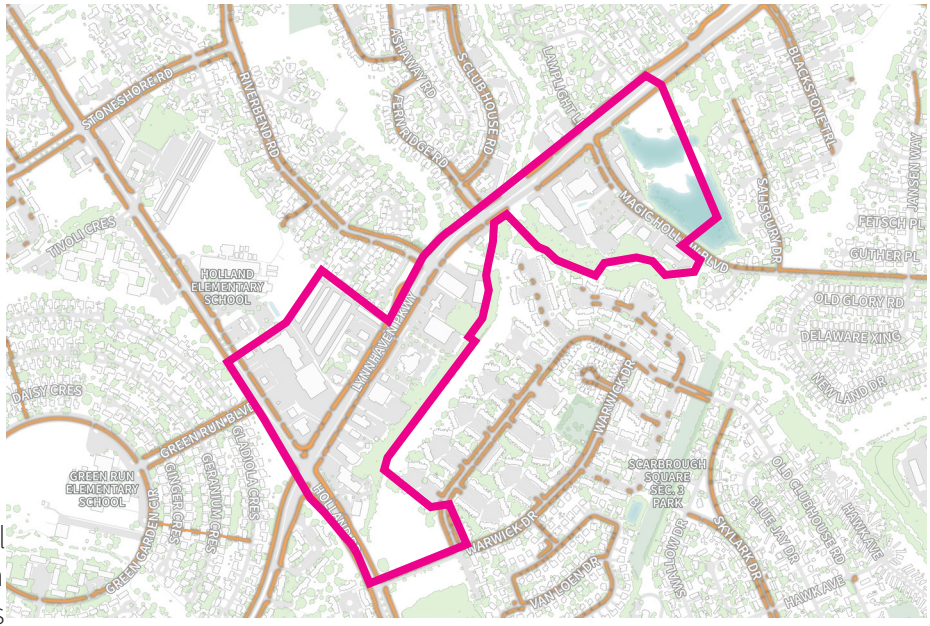


Environmental Conditions

This area is susceptible to localized flooding during large storm events. Some commercial properties are adjacent to tributaries of the Lynnhaven River. New developments will incorporate stormwater management practices to mitigate local flooding.

Parking Conditions

Parking is provided by surface lots in the commercial area. In the residential areas it is provided by driveways. All of the light gray on the map to the right represents parking areas
The orange highlighted areas in the map to the right represent sidewalks. The light gray indicates paved areas designed for vehicles.



Neighborhood Access

Neighborhood access to this commercial area happens via the main roads. Currently the rear of commercial parcels have a service road and often a natural buffer between neighborhoods and the rear of commercial parcels.

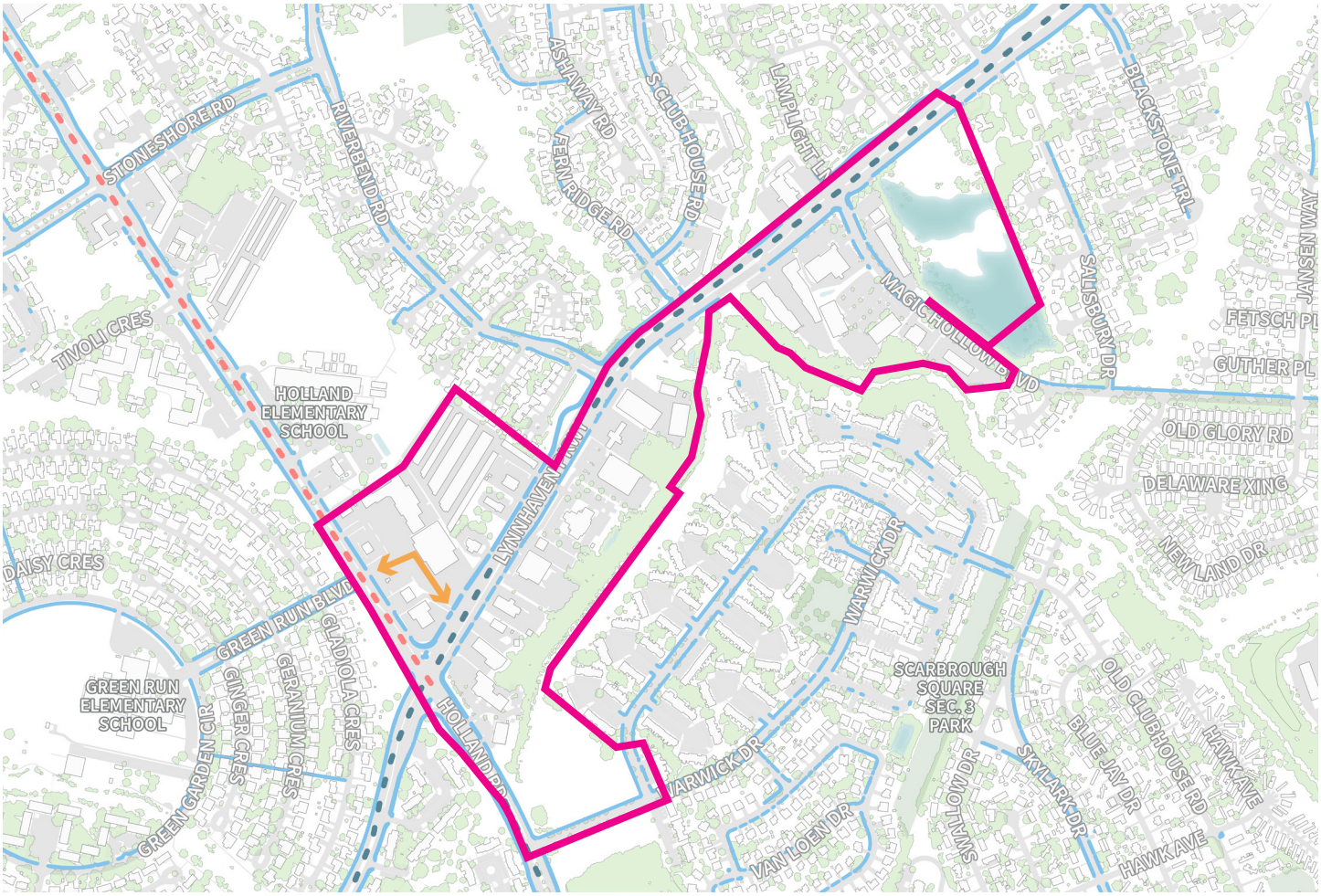
There is a good sidewalk network along public roads here. These sidewalks should be connected to interior sidewalks in commercial properties with painted sidewalks or raised speed tables with visual indicators of pedestrian traffic.

AICUZ STUDY AREA: HOLLAND & LYNNHAVEN

IMPROVED CONNECTIONS

The eastern commercial properties are currently all accessed via Lynnhaven Parkway, which has increased the traffic load and congestion along that street. To ease congestion, developments should endeavor to connect parking lots with drive aisles to benefit from the shared parking possibilities.

The rear of these properties can be lined with a pedestrian path that follows the London Bridge Creek to create a separate path for walking that's comfortable and safe from vehicular traffic. This creek side trail should allow commercial access to those within walking or biking distance.



City of Virginia Beach Active Transportation Plan

Existing Facilities

- Shared Use Paths
- Conventional Bike Lanes (On Road)
- Sidepaths
- Nature Trails
- Recreational Loop

Proposed Facility Type (Current)

- Shared Use Path
- Protected Bike Lane
- Bike Lane
- Sidepath

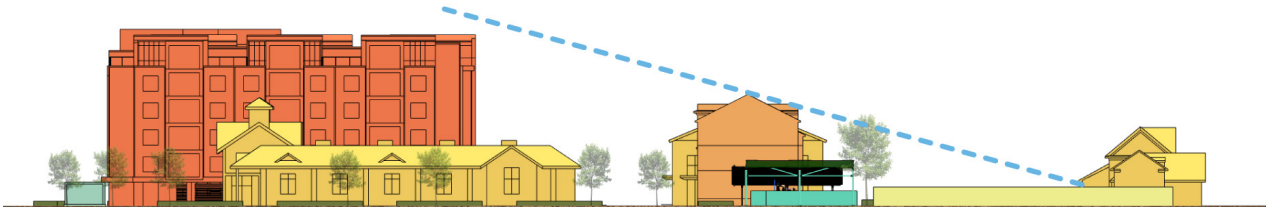
AICUZ STUDY AREA: HOLLAND & LYNNHAVEN

NEIGHBORHOOD COMPATIBILITY

The existing neighborhoods surrounding this commercial area are zoned for residential use. Often there are mature trees and water features that act as a buffer between residential and non-residential uses. These residential areas are composed of single-family detached homes, and attached town homes.

The rear of many commercial properties in this area border the yards of private homes. In addition to mature trees separating commercial from residential uses there are often fences and water features making the commercial area distinct and separate from the residential developments. Newer development trends often mix these two uses to increase the market base that the commercial areas have.

New commercial developments adjacent to residential areas should be designed to preserve the private nature of the existing backyards in the residential areas. Effective methods are screening with evergreen trees and limiting building heights within 100 feet of adjacent residential parcels. Below is an example of how tree screening should be used as a buffering method for buildings in this area.



A network of wide pedestrian streets and paths exists in this area. Most of these paths are located along public roads, with smaller paths located within separate developments. There is currently a lack of continuous connection between these two types of paths. Parking lots between public sidewalks and building entrances create an uncomfortable walking experience despite a relatively short distance.

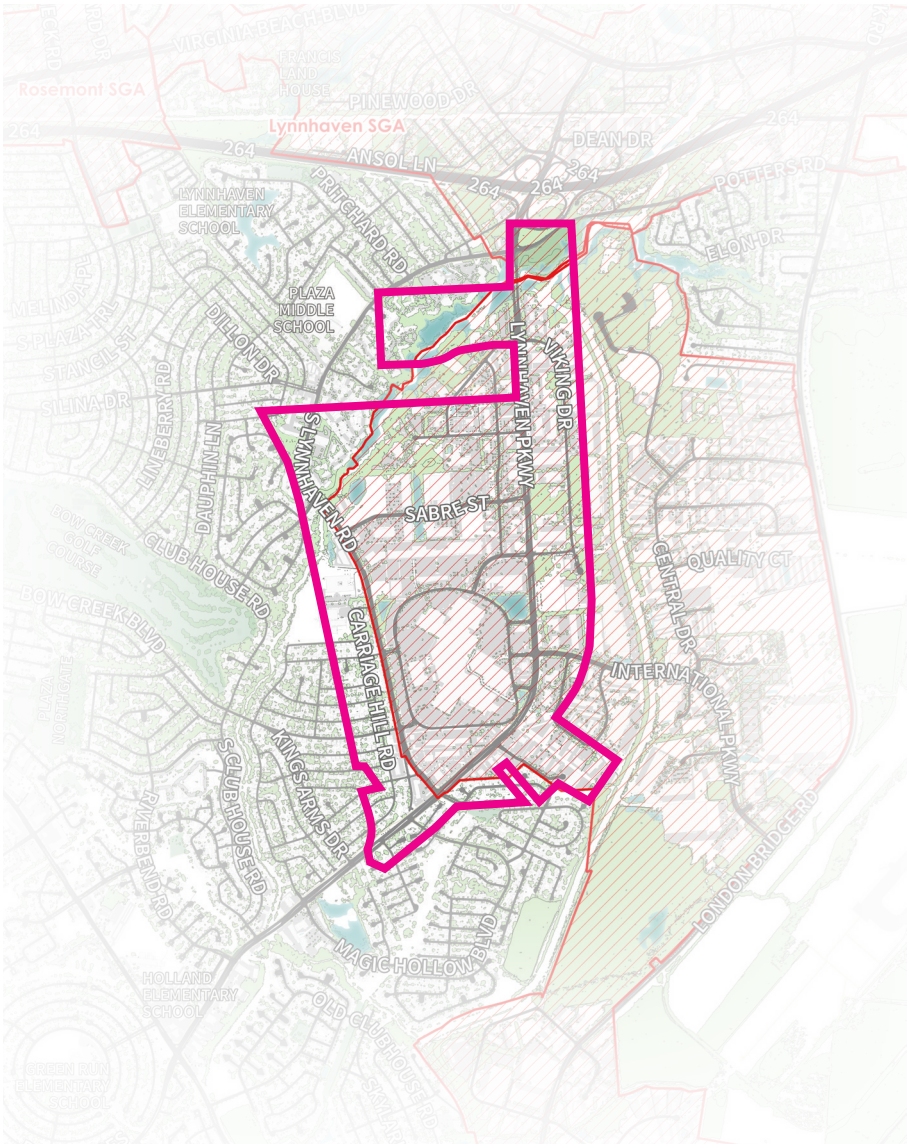
New commercial development should provide and experiential benefit to adjacent residents by constructing paths that connect residential trails to businesses and public trails.

EXAMPLE IMAGES

AICUZ STUDY AREA: LYNNHAVEN MALL AREA

OVERVIEW

The Lynnhaven mall area is located directly south of the Lynnhaven SGA and interstate 264. It incorporates a large series of strip mall developments, industrial parks and office buildings surrounding the Lynnhaven Mall. This area is located within the City's AICUZ APZ 2 which limits redevelopment to certain compatible uses.



DESIGN PRINCIPLES

Due to the location of the commercial in the AICUZ area, redevelopment should include uses that are deemed as compatible by the Zoning Ordinance. Open space should be incorporated where possible. Redevelopment should also incorporate adequate height restrictions set forth by the AICUZ regulations and limit uses including:

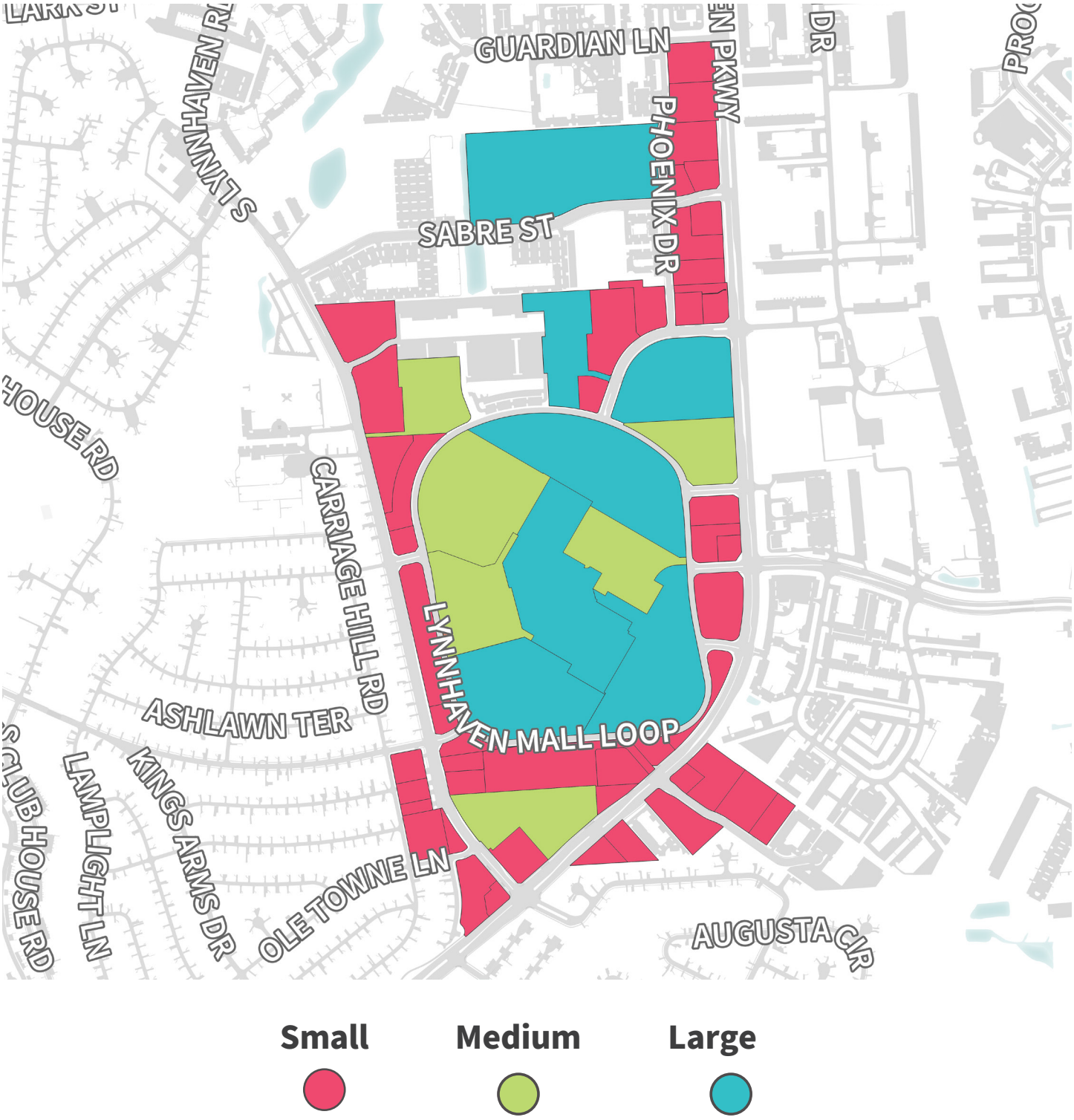
- Towers, tall structures or vegetation that would penetrate the navigable airspace near Naval Air Station Oceana
- Uses that would generate smoke, steam or dust
- Uses that would attract birds
- Uses that would produce electromagnetic interference with aircraft communication, navigation, or other electrical systems

GOALS

- Create successful uses that are compatible with the guidelines set forth in the AICUZ Ordinance.
- Create improved pedestrian connections to and from the commercial and retail spaces found within the Lynnhaven Mall area and increase compatibility of uses with surrounding neighborhoods.

AICUZ STUDY AREA: LYNNHAVEN MALL AREA

SITE SCALES



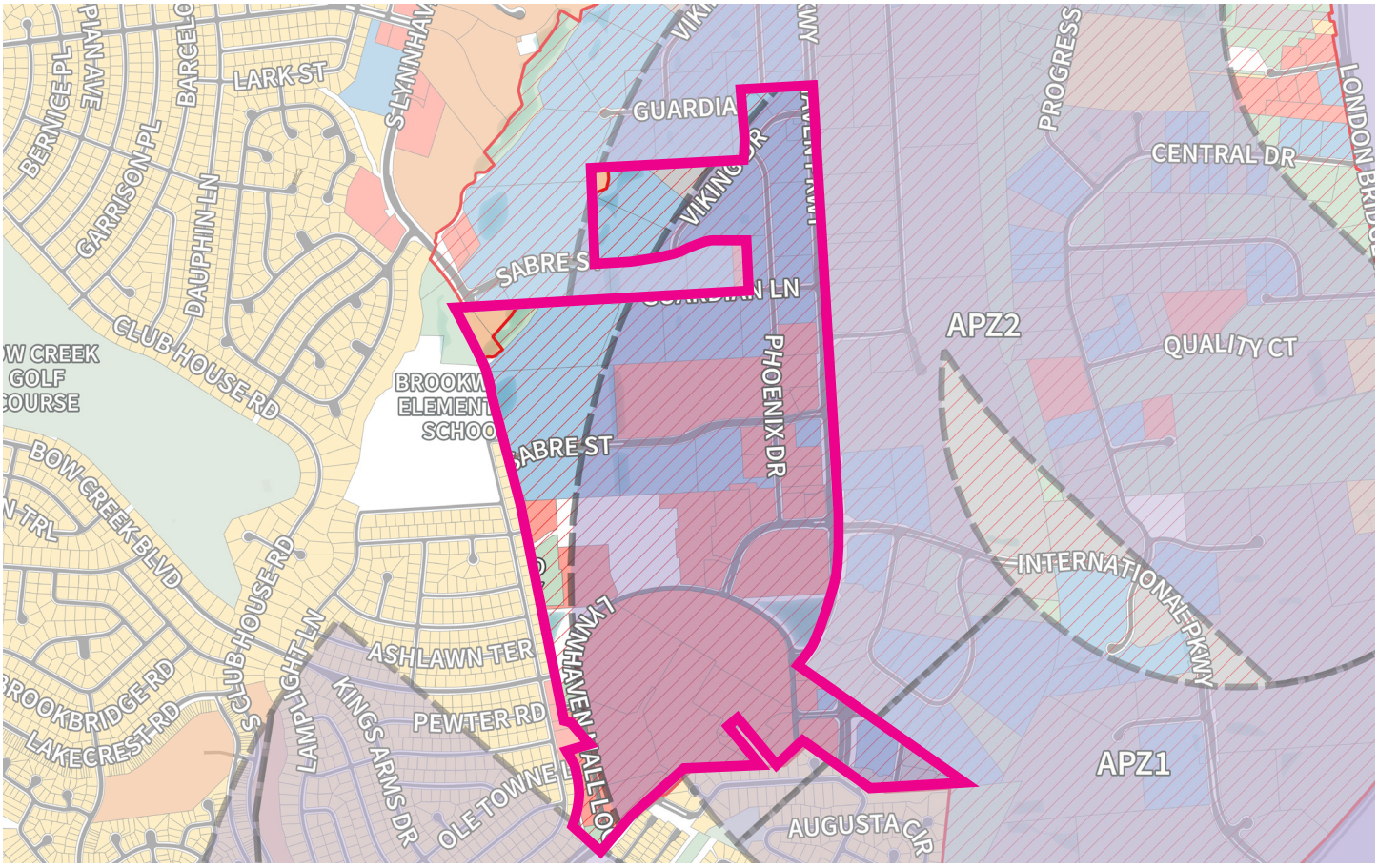
AICUZ STUDY AREA: LYNNHAVEN MALL AREA

EXISTING CONDITIONS

The development pattern of the commercial areas is impacted by the City's AICUZ requirements. The resulting commercial uses revolve around warehouse uses, restaurants and auto-oriented retail. The parcels outside of the APZ zone feature strip malls but have the potential to support denser residential development if rezoned.

There are several community amenities nearby, such as parks, small lakes and creeks, and multiple elementary schools. This area is attractive for families looking for a single family home in a quiet landscape. Currently the Lynnhaven Mall area receives a moderate amount of visitors, but there are plans in the future to add additional amenities and residents to that area which may increase the traffic along Lynnhaven Parkway.

There have been successful trails constructed nearby in recent history that are separated from major thoroughfares with landscaped verges of about 10 to 20 feet in width. The city of Virginia Beach plans to build upon the success of these trails by adding a bike path and shared use path to Lynnhaven Parkway and Holland Road respectively.

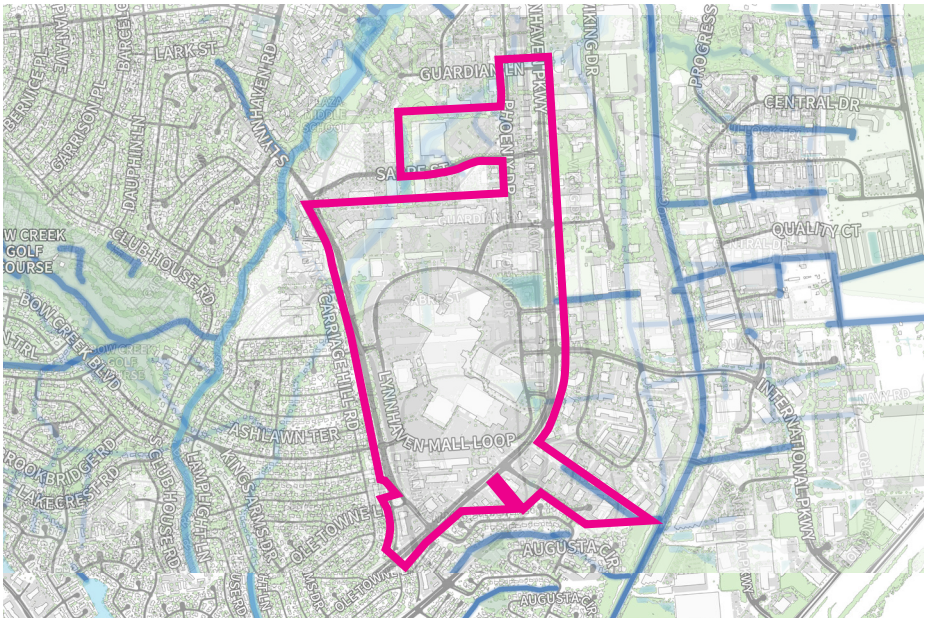


AICUZ STUDY AREA: LYNNHAVEN MALL AREA

EXISTING CONDITIONS

Street Network

The main arterial connection to this area is Lynnhaven Parkway running north-south along the eastern edge. S Lynnhaven Road is an interior perimeter road that encompasses the mall and other retail/commercial buildings. This road connects to the exterior residential communities surrounding the commercial area



Environmental Conditions

This area is susceptible to localized flooding during large storm events. Some commercial properties are adjacent to tributaries of the Lynnhaven River. New developments will incorporate stormwater management practices to mitigate local flooding.

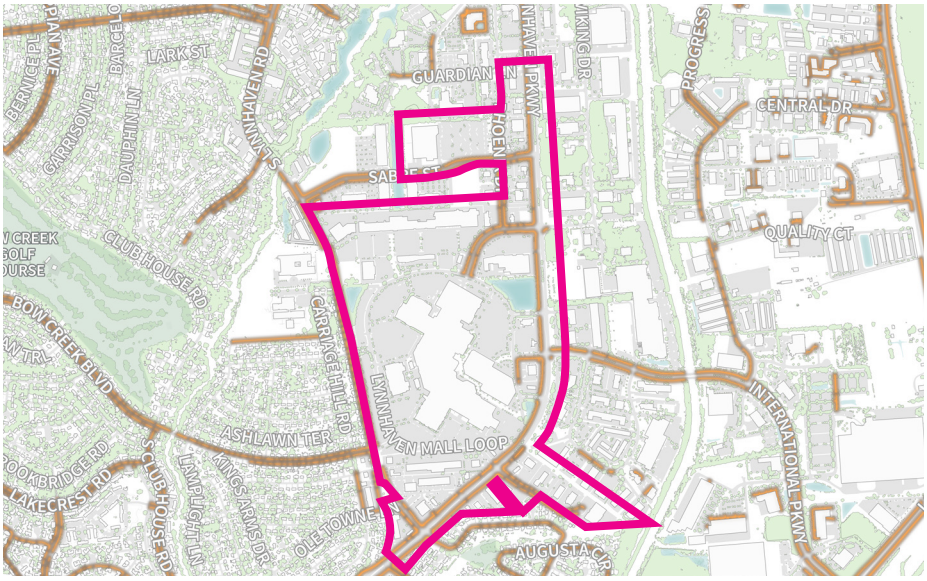
Parking Conditions

Parking is provided by surface lots in the commercial area. In the residential areas it is provided by driveways. All of the light gray on the map to the right represents parking areas
The orange highlighted areas in the map to the right represent sidewalks. The light gray indicates paved areas designed for vehicles.

Neighborhood Access

Primary neighborhood access to this area occurs along S Lynnhaven Road and circles around the mall area connecting to Lynnhaven Parkway and interior retail/commercial.

There is a good sidewalk network along public roads here. These sidewalks should be connected to interior sidewalks in commercial properties with painted sidewalks or raised speed tables with visual indicators of pedestrian traffic.

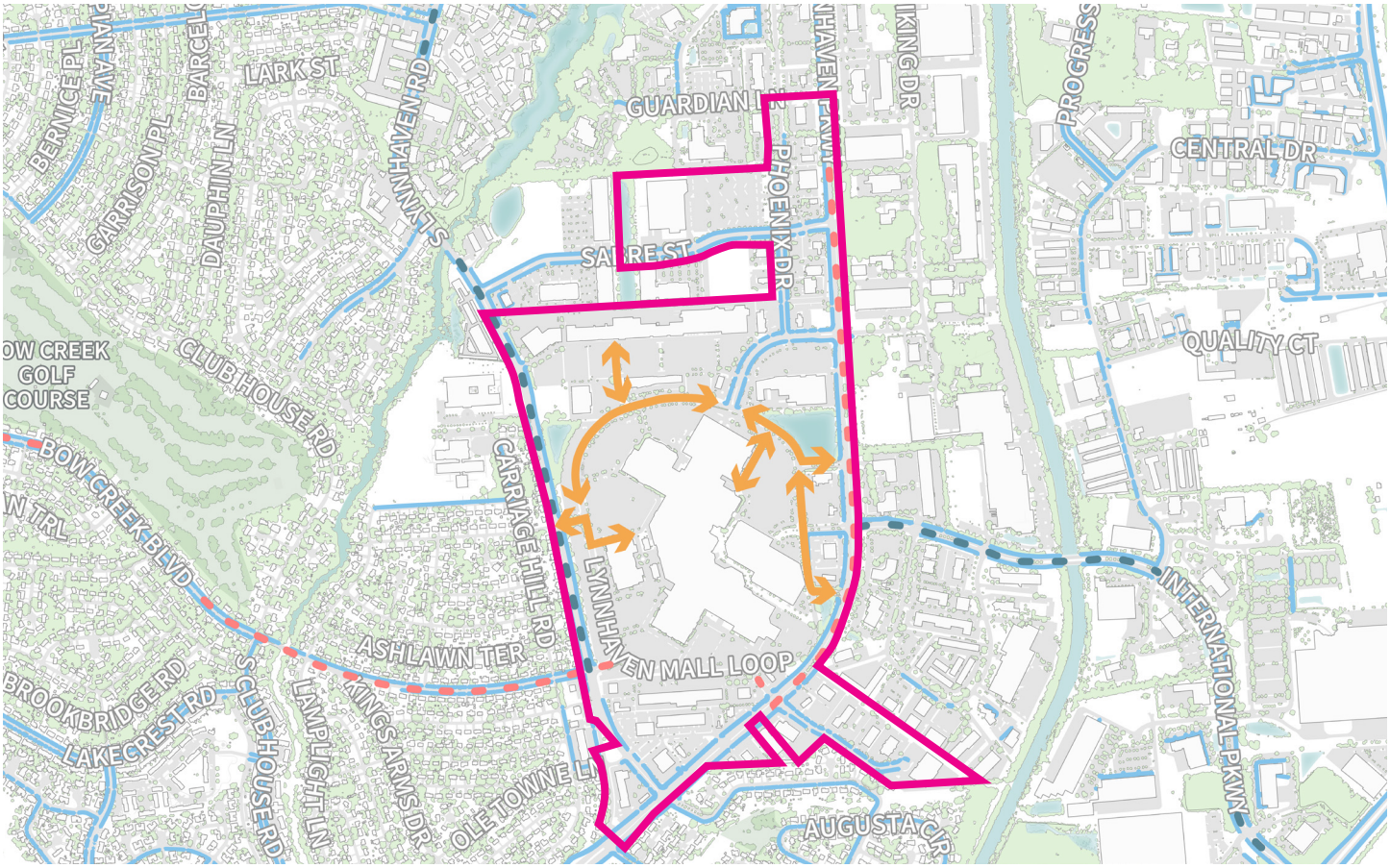


AICUZ STUDY AREA: LYNNHAVEN MALL AREA

IMPROVED CONNECTIONS

The eastern commercial properties are all currently accessed via Lynnhaven Parkway, which increases the traffic load and congestion along that street. To ease congestion, developments should endeavor to connect parking lots with drive aisles to benefit from the shared parking possibilities.

The rear of these properties can be lined with a pedestrian path that follows the London Bridge Creek to create a separate path for walking that's comfortable and safe from vehicular traffic. This creek side trail should allow commercial access to those within walking or biking distance.



City of Virginia Beach Active Transportation Plan

Existing Facilities

- Shared Use Paths
- Conventional Bike Lanes (On Road)
- Sidepaths
- Nature Trails
- Recreational Loop

Proposed Facility Type (Current)

- Shared Use Path
- Protected Bike Lane
- Bike Lane
- Sidepath

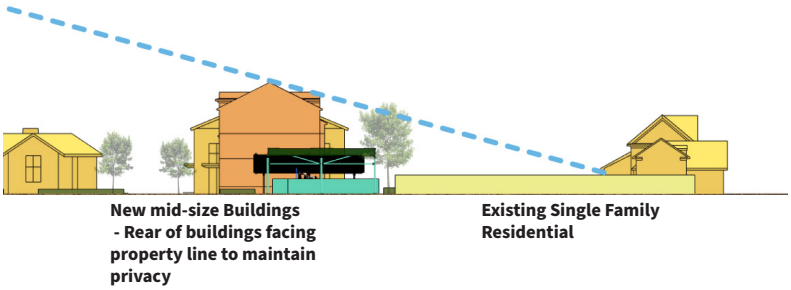
AICUZ STUDY AREA: LYNNHAVEN MALL AREA

NEIGHBORHOOD COMPATIBILITY

The existing neighborhoods surrounding this commercial area are zoned for residential use. Often there are mature trees and water features that act as a buffer between residential and non-residential uses. These residential areas are primarily composed of single-family detached homes and attached town homes.

The rear of many commercial properties in this area border the yards of private homes. In addition to mature trees separating commercial from residential uses there are often fences and water features making the commercial area distinct and separate from the residential developments. Newer development trends often mix these two uses to increase the market base that the commercial areas have.

New commercial developments adjacent to residential areas should be designed to preserve the private nature of the existing backyards in the residential areas. Effective methods are screening with evergreen trees and limiting building heights within 100 feet of adjacent residential parcels. Below is an example of how tree screening should be used as a buffering method for buildings in this area.



A network of wide pedestrian streets and paths exist in this area. Most of these paths are located along public roads, with smaller paths located within separate developments. There is currently a lack of continuous connection between these two types of paths. Parking lots between public sidewalks and building entrances create an uncomfortable walking experience despite a relatively short distance.

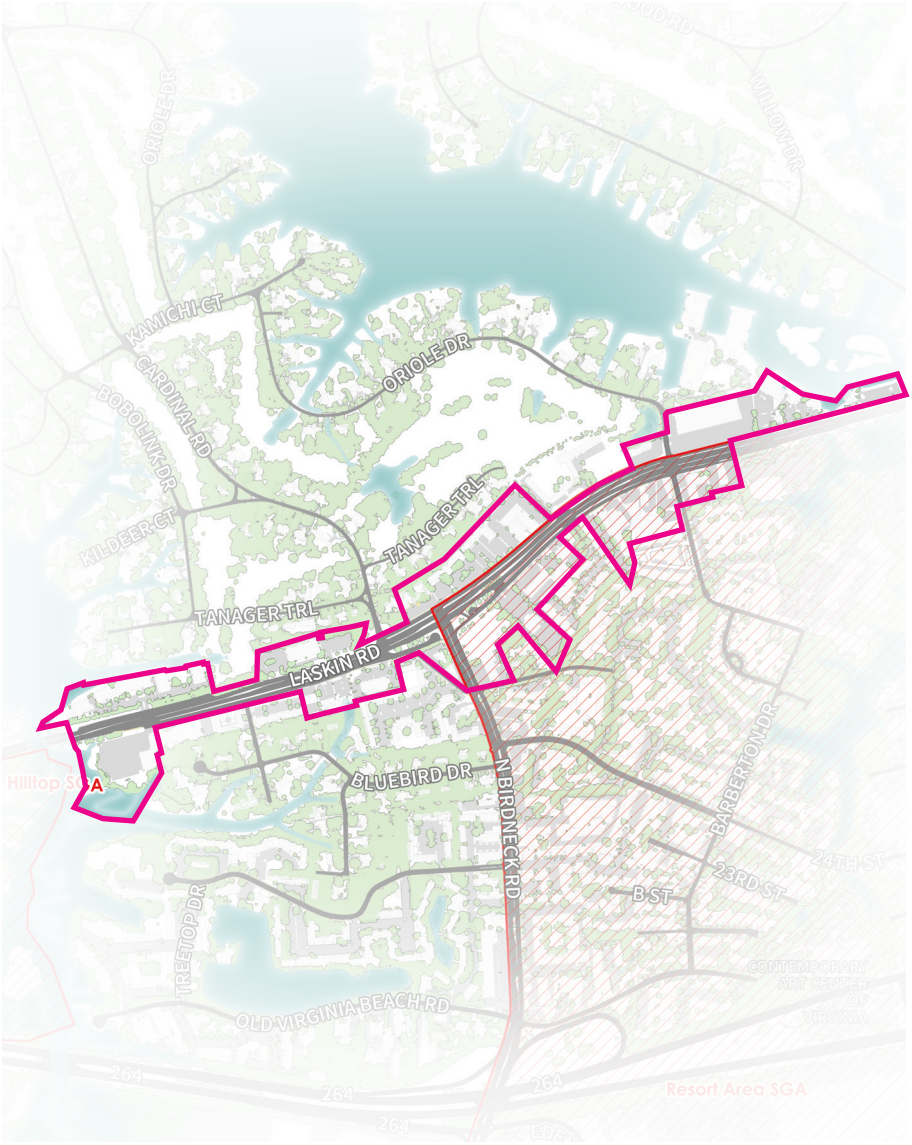
New commercial development can provide and experiential benefit to adjacent residents by constructing paths that connect residential trails to businesses and public trails.

EXAMPLE IMAGES

AICUZ STUDY AREA: HILLTOP TO RESORT AREA

OVERVIEW

The vision for the commercial area betweenHilltop and the Resort Area includes a low-density buffer of development along the Laskin Road corridor that serves the adjacent residential neighborhoods. The residential community to the north surrounds a golf course and many residents have personal vehicles to travel from their homes to golf courses. This embodies the relaxed and comfortable lifestyle that's characteristic of this commercial area on the border of the Resort SGA in Virginia Beach.



DESIGN PRINCIPLES

This commercial area is beside some of the most luxurious homes in the area. The northern residential community is located around a golf course, with access to a yacht club and beachfront amenities within walking distance.

The residential character on the southern side of Laskin Rd is much more dense with townhomes, apartments, and relatively closely spaced single family homes.

There is a sufficient vehicular infrastructure here with roadways of up to 8 lanes in combined width. Crosswalks should be incorporated across lighted intersections to increase pedestrian safety and access.

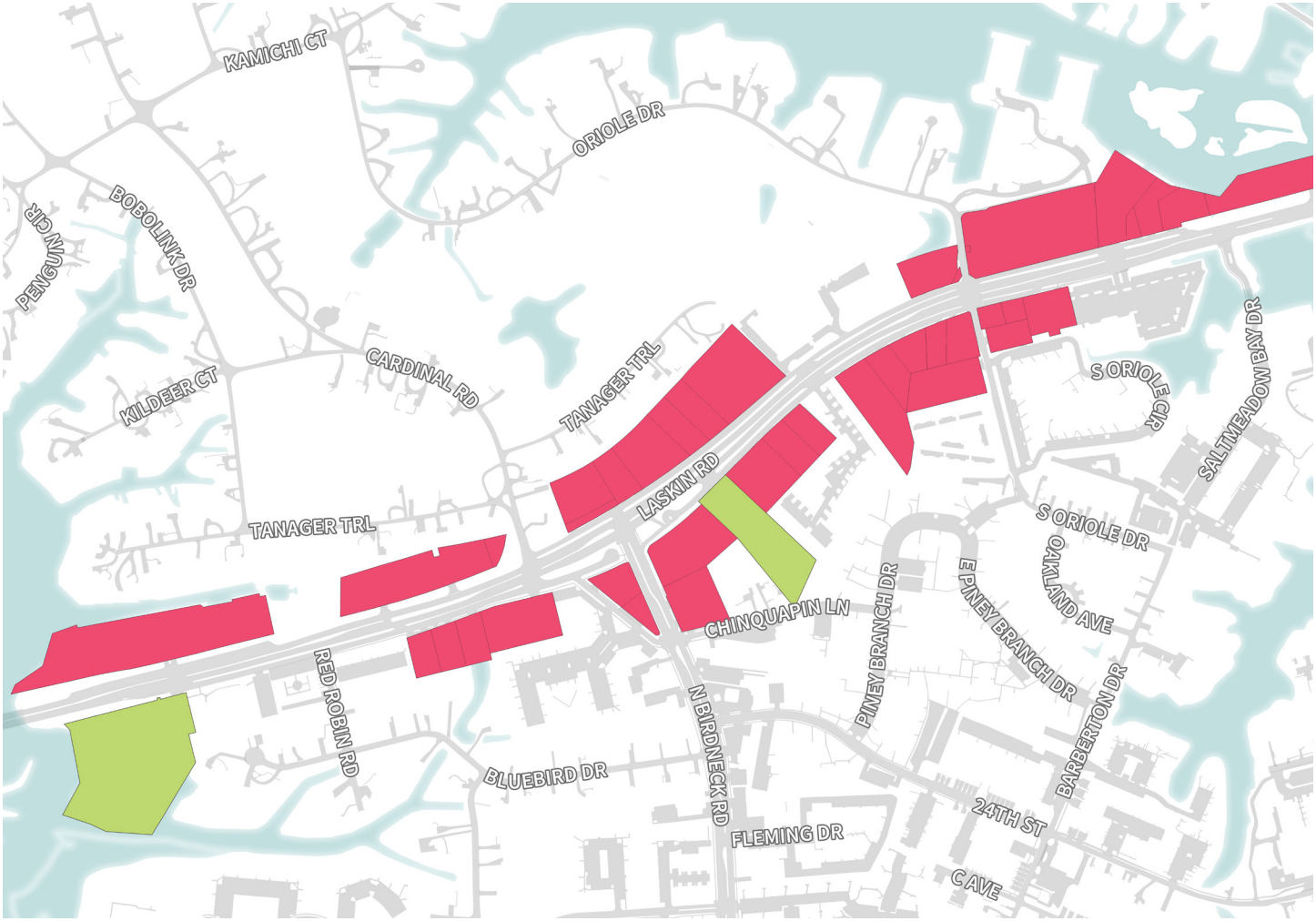
A number of capital improvement projects are planned in this area, including gateway art that defines the area as well as a bike path planned for N Birdneck Road. New developments should incorporate these new amenities into their plans.

GOALS

- Build upon the existing natural resources and extend the resort experience to public open space through an interconnected system of parks and trails.
- Support mixed-use developments that will be necessary to achieve the goal of a year-round resort and will enable the area to become more connected and walkable.
- Improve traffic calming, pedestrian circulation, bike circulation, vehicular circulation, and on-street parking availability.

AICUZ STUDY AREA: HILLTOP TO RESORT AREA

SITE SCALES



The majority of commercial parcels in this study area are relatively small. All parcels are accessed via Laskin Rd and N Birdneck Road. Existing parcels have individual vehicular entrances separate from adjacent parcels. Small lots should consider possiblity of connected parking lots and utilizing shared parking to provide cross-parcel access.

Medium sized lots in this area are adjacent to denser housing types and should be able to support future mixed-use development constructed with respect to the style and scale of adjacent homes.

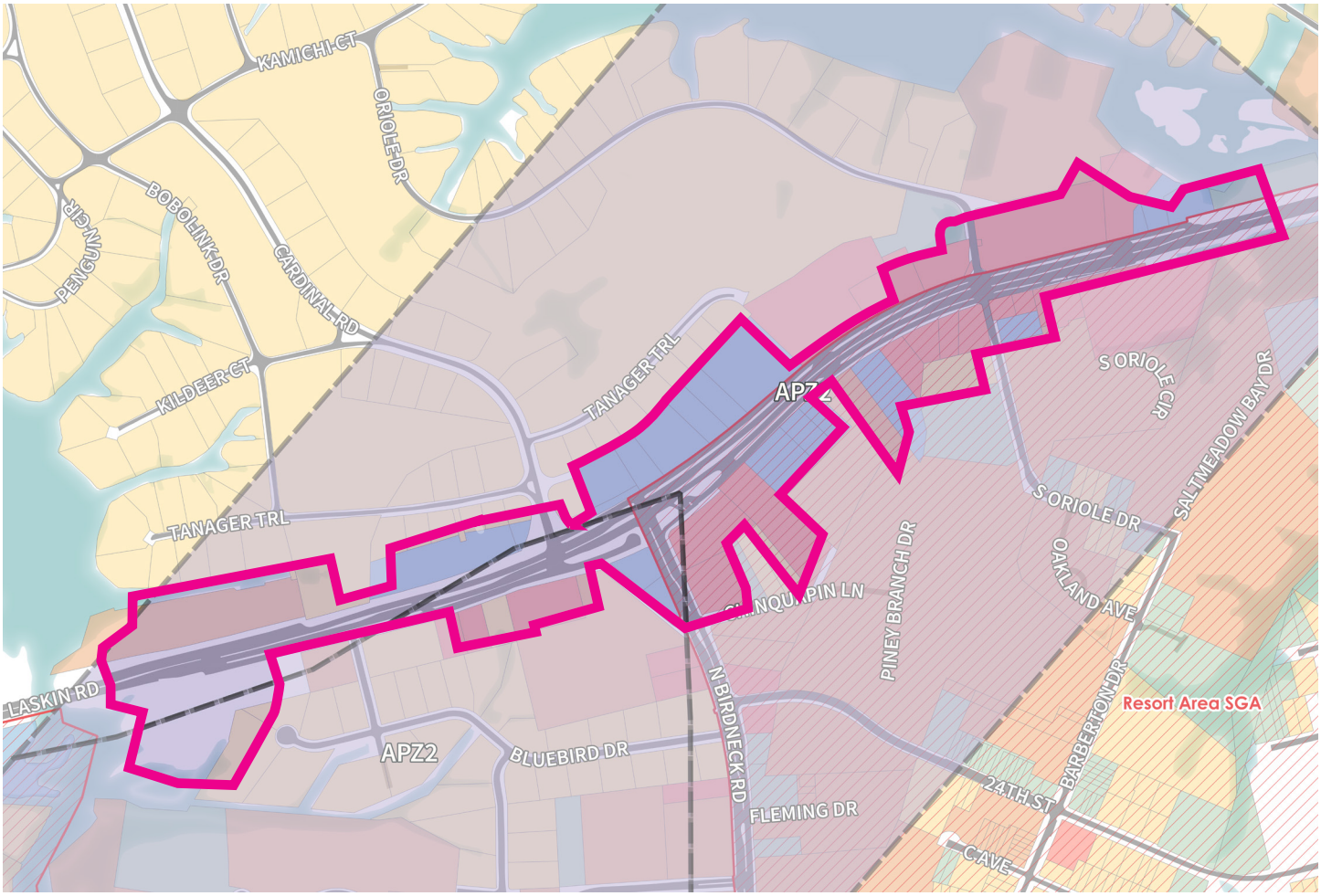
AICUZ STUDY AREA: HILLTOP TO RESORT AREA

EXISTING CONDITIONS

This commercial corridor is located along Laskin Road, a major thoroughfare that many people use to drive to commute to the Oceanfront. The entire commercial area is within the boundaries of the APZ2, with close proximity to Oceana Naval Air Station.

Most commercial parcels in this area offer services for local residents such as dining, religious venues, retail, grocery stores and personal services. In addition, there are business catered to Resort Area visitors with access to waterways to launch boats and biking tours of the area.

Commercial parcels here are accessed from the main road and are most safely travelled to by car. There are few sidewalks, crosswalks, or designated areas for pedestrians to walk.

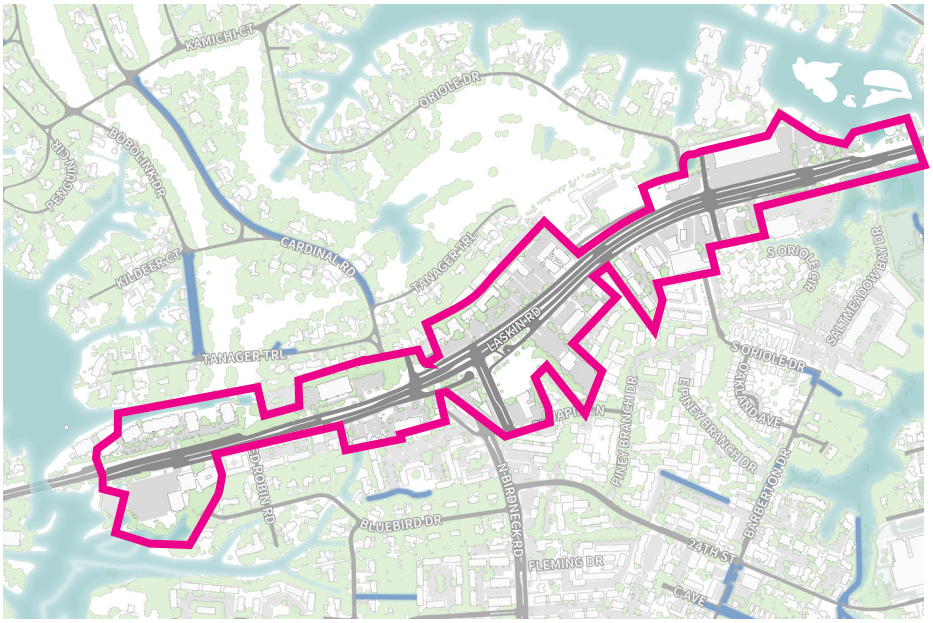


AICUZ STUDY AREA: HILLTOP TO RESORT AREA

EXISTING CONDITIONS

Street Network

The street network in the residential communities surrounding the commercial area is a winding, suburban pattern with one or two connections to main roads.
The commercial areas are only connected to the main streets, not neighborhood streets.



Environmental Conditions

This area is succeptible to flooding from storm surge as well as localized flooding during large rain events.
Some commercial properties are adjacent to tidally influenced bodies of water.

New developments will benefit from close proximity to water, but must incorporate stormwater management and other resilient building practices to mitigate local flooding.

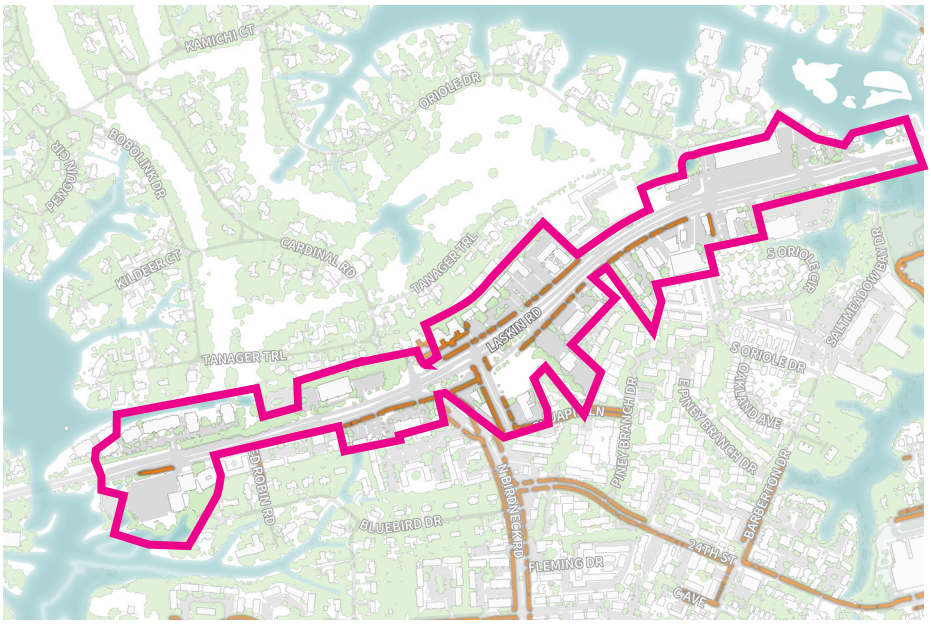
Parking Conditions

Parking is provided by surface lots in the commercial area. In the residential areas it is provided by driveways.
All of the light gray on the map to the right represents parking areas
The orange highlighted areas in the map to the right represent sidewalks. The light gray indicates paved areas designed for vehicles.

Neighborhood Access

Neighborhood access to this commercial area happens via the main roads. Currently the rear of commercial parcels have a service road and often a natural buffer between neighborhoods and the rear of commercial parcels.

There is a good sidewalk network along public roads here. These sidewalks should be connected to interior sidewalks in commercial properties with painted sidewalks or raised speed tables with visual indicators of pedestrian traffic.

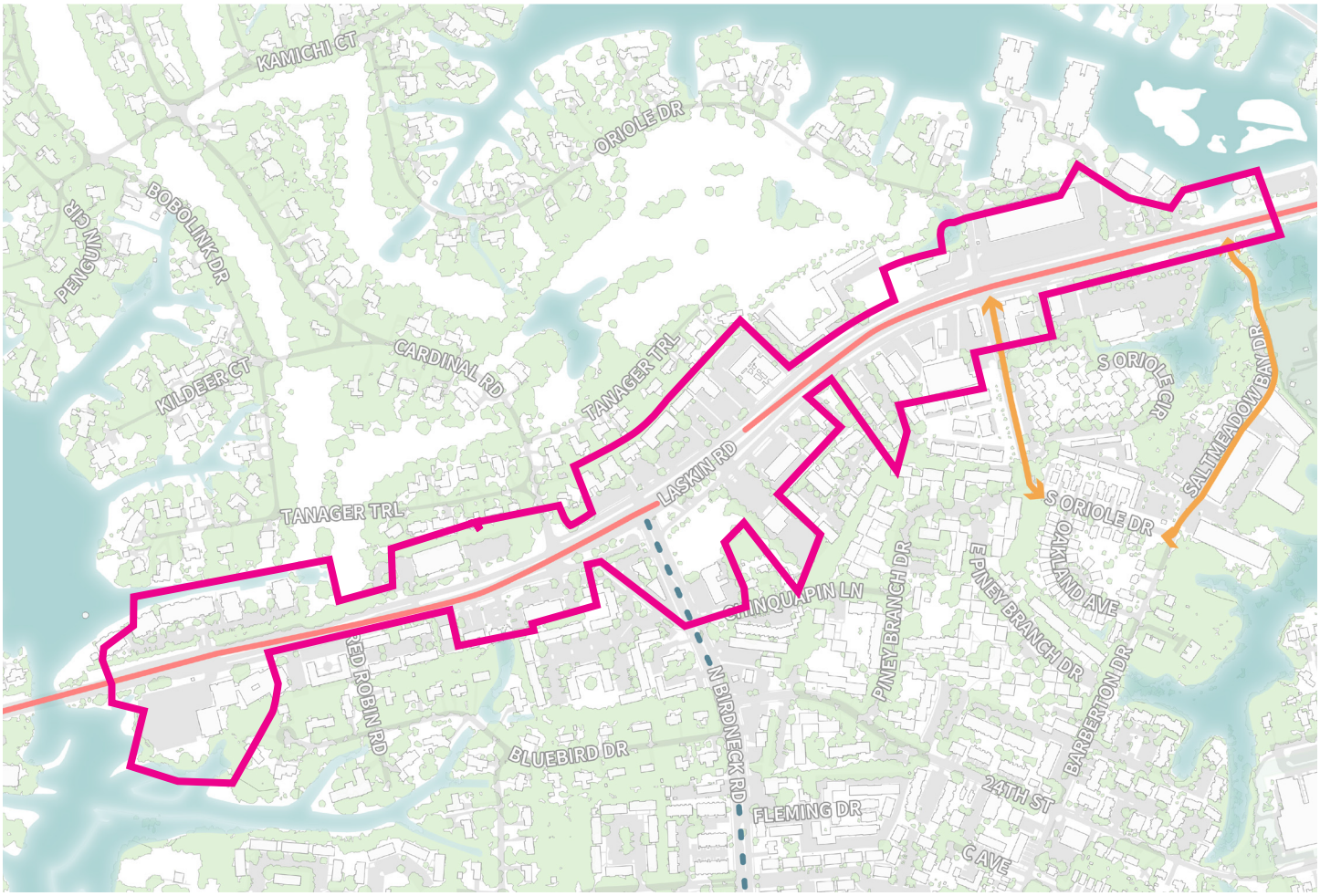


AICUZ STUDY AREA: HILLTOP TO RESORT AREA

IMPROVED CONNECTIONS

Based on current conditions, the residential community to the north must travel to this commercial area by car. As there are only a few roads leading out of the neighborhood, traffic congestion is a strong possibility as these parcels are developed. Offering an alternative to driving to residents of the golf-course community is encouraged here as many homeowners have small personal vehicles that can be operated on smaller paths .

Residential parcels to the south should be enhanced with biking and walking connections up to the commercial areas of Laskin Road. These can be constructed along existing streets, between the road and the natural landscape of mature trees and bodies of water.



City of Virginia Beach Active Transportation Plan

Existing Facilities

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AICUZ STUDY AREA: HILLTOP TO RESORT AREA

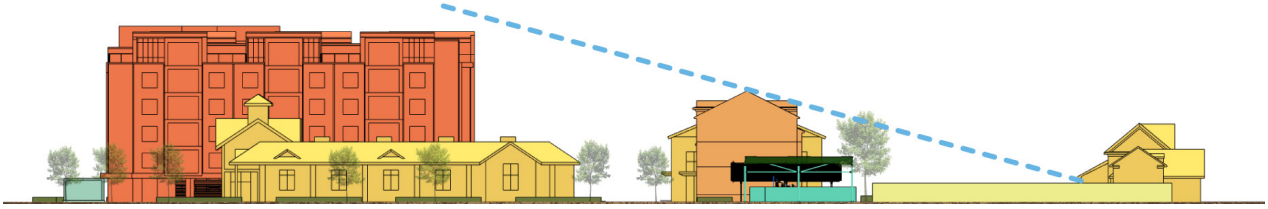
NEIGHBORHOOD COMPATIBILITY

The existing neighborhoods surrounding this commercial area are zoned for residential use. There are often mature trees and water features that act as a buffer between residential and non-residential uses. These residential areas are composed of single-family detached homes and attached townhomes.

The rear of many commercial properties in this area border the yards of private single-family homes. In these instances , new commercial develpoment should maintain the serenity of that private yard by buffering the rear a tree lined street with a wide sidewalk between the rear of both properties.

In instances where commercial property abuts a residential development with multiple owners, there should be an attempt made to create a pathway that may allow those within biking or walking distance to travel to commercial areas without using a car.

The neighborhood is home to several retirees and vacationers and has a relaxed character that commercial developments should embrace. Constructing park-like places for resting and well-lit continuous tree-lined paths for people to walk from their homes to individual businesses comfortably should be a goal of new development.



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New commercial development should provide and experiential benefit to adjacent residents by constructing paths that connect residential trails to businesses and public trails.

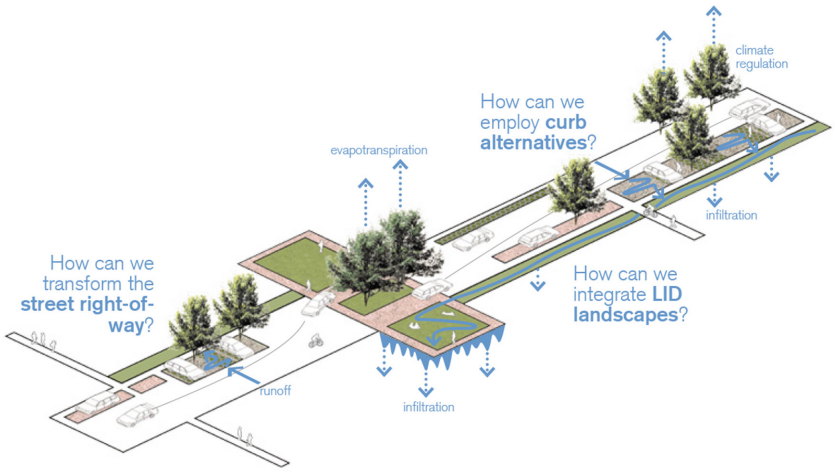
EXAMPLE IMAGES

LOW IMPACT DEVELOPMENT (LID) DESIGN MANUAL

Stormwater Management

The Low Impact Development (LID) design manual for urban areas was developed by the University of Arkansas Community Design Center to facilitate design improvements and practices with regards to stormwater management throughout all avenues of development and home ownership. The following examples illustrate "hard engineering" using such infrastructure as pipes and pumps and "soft engineering" which the LID favors and utilizes the natural environment and landscape in order to provide positive impacts on handling stormwater and runoff.

The following practices should be implemented where possible in commercial redevelopment opportunities in an effort to improve stormwater management and flood resiliency.

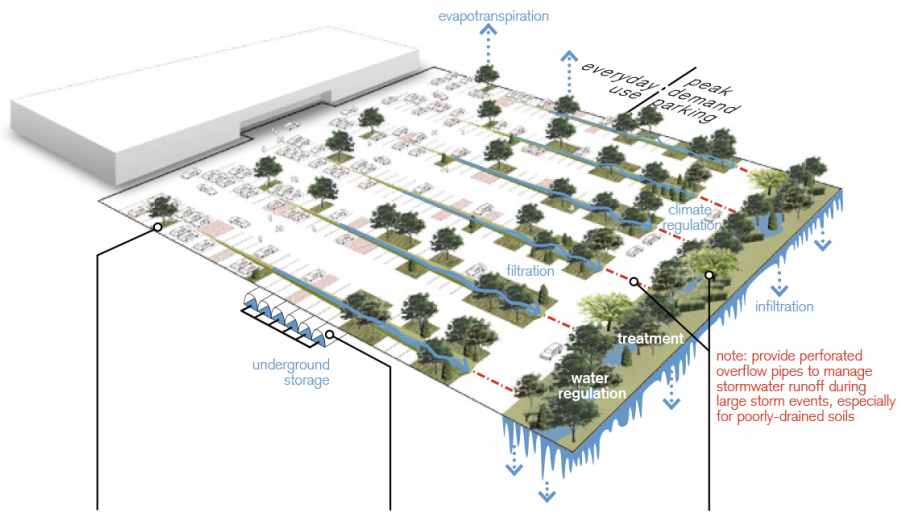


Pixelated Parking

Reduce impervious surfaces by pixelating the parking surface with LID paving and landscapes.

An intrinsically adaptive solution, ideal for retrofits, pixel configurations propose localized replacement of impervious surfaces with absorbent landscape islands and pervious paving. Recognizing that the outer 40 percent of many commercial parking lots are only used during peak demand twice a year, the lot frontage offers an excellent public garden without sacrificing parking capacity. The pixelated parking solution reduces stormwater runoff through the addition of trees and pervious paving, eliminating the need for conventional pipe-and-pond solutions.

Water from impervious drive aisles flows to the pervious parking stalls, slowing and redistributing runoff. Through curb cuts (see "Curb Alternatives" pp. 96-97), or flush curbs, the water is directed to vegetated islands, which are connected by a bioswale or underground oversized pipe. Peak flows eventually end in an overflow infiltration basin for groundwater recharge. If space is unavailable for an infiltration basin or other detention facility, stormwater can be detained in an underground storage facility for slow release into the municipal stormwater system.



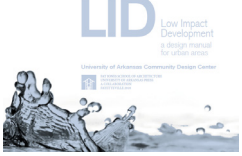
Slow
Remove curbs and sink tree islands in parking stalls to receive and filter stormwater from **one to ten-year storm events** as it enters treatment landscapes. *Bioswale* pp. 182-183

Spread
For **10 to 25-year storm events**, use underground storage if soils are poorly drained or land area is limited. *Underground Detention* pp. 152-153 and *Wet Vault* pp. 156-157

Soak
Use oversized pipes to connect bioswales to an infiltration basin or a retention pond, which retain and infiltrate runoff during **25 to 50-year storm events**. *Retention Pond* pp. 160-161

Low Impact Development
A design manual
for urban areas

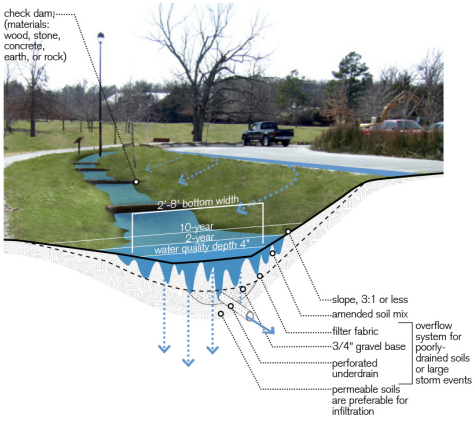
Fay Jones School Of Architecture
University Of Arkansas Press
A Collaboration
Fayetteville 2010



http://www.bwdh2o.org/wp-content/uploads/2012/03/Low_Impact_Development_Manual-2010.pdf

Dry Swale

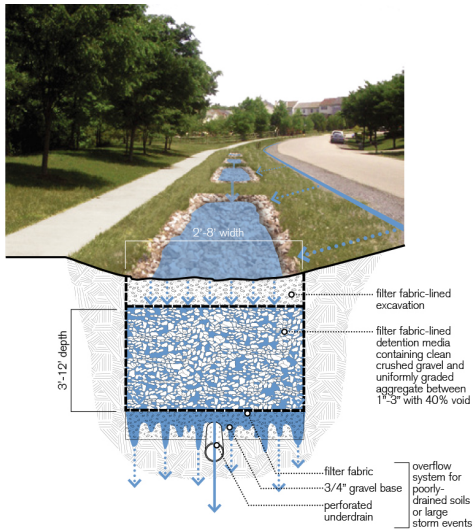
A dry swale, or grassed swale, is an open grassed conveyance channel that filters, attenuates, and detains stormwater runoff as it moves downstream.



References:
Low Impact Development Design Strategies–An Integrated Design Approach
Low Impact Development Manual for Michigan
United States Department of Housing and Urban Development
Stormwater Management Handbook
Minnesota Urban Small Sites BMP Manual

Infiltration Trench

Infiltration trenches are laminated systems with fabric-lined excavations atop a fabric-lined reservoir to increase infiltration.



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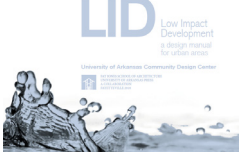

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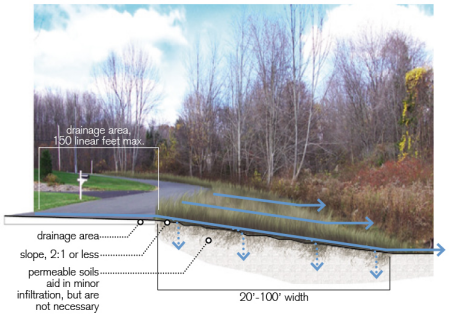
Filter Strip

A filter strip is a sloped medium that attenuates stormwater runoff by converting it into sheet flow, typically located parallel to an impervious surface such as a parking lot, driveway, or roadway.



References:
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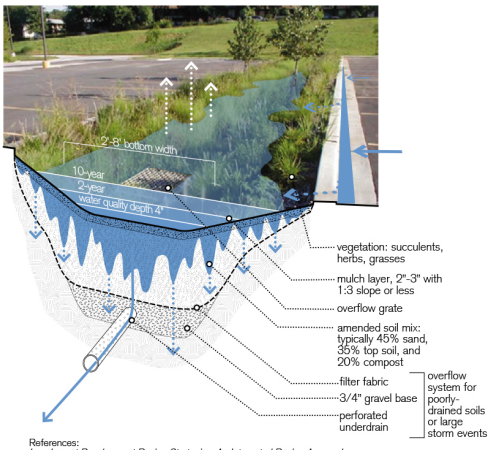
Bioswale

A bioswale is an open, gently sloped, vegetated channel designed for treatment and conveyance of stormwater runoff.



References:
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Low Impact Development Manual for Michigan
Low Impact Development Technical Guidance Manual for Puget Sound
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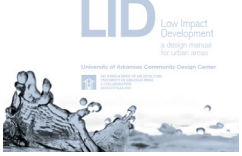

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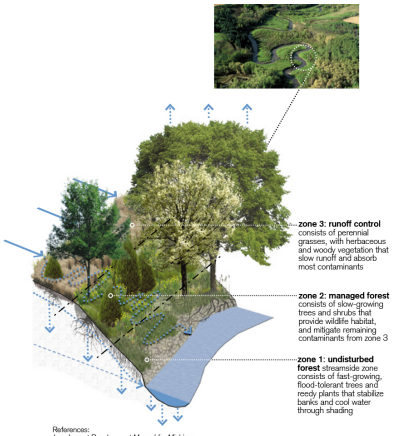
Riparian Buffer

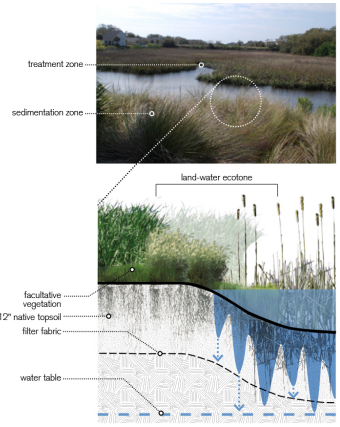
A riparian buffer is a strip of hydric soil with facultative vegetation along the banks of a river or stream offering niche ecotone services.



References:
Low Impact Development Manual for Michigan
Conservation Buffers: Design Guidelines for Buffers, Corridors, and Greenways

Constructed Wetland

Constructed wetlands are artificial marshes or swamps with permanent standing water that offer a full range of ecosystem services to treat polluted stormwater.



References:
Low Impact Development Manual for Michigan
United States Department of Housing and Urban Development
Minnesota Urban Small Sites BMP Manual

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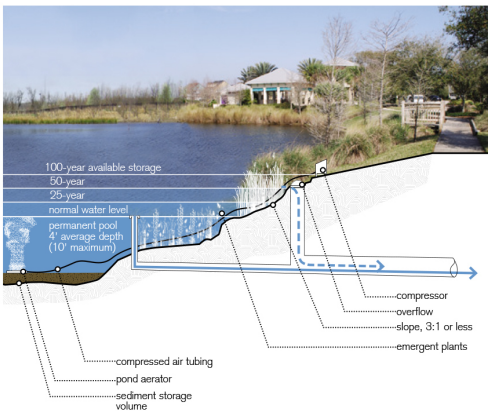
Retention Pond

A retention pond, also known as a wet pool or wet pond, is a constructed stormwater pond that retains a permanent pool of water, with minor biological treatment.

Wet ponds remove pollutants through biological uptake processes and sedimentation. The amount of pollutants that are removed from stormwater runoff is proportionate to the length of time runoff remains in the pond, as well as the relation of runoff to retention pond volume. Since retention ponds must maintain a permanent pool, they cannot be constructed in areas with insufficient precipitation or highly permeable soils, unless the soil is compacted or overlain with clay. Generally, continual drainage inputs are required to maintain permanent pool levels.

One advantage of a retention pond is the presence of aquatic habitat when properly planted and maintained. The use of a pond aerator is necessary to prevent stagnation and algae growth that can lead to eutrophication, or an anaerobic environment. A balanced aerobic environment is a necessary condition for aquatic life and pest control. Regular maintenance inspections are needed to ensure proper drainage, aerobic functioning and aeration, and vegetative health. Trash, debris, and sediment will need to be removed periodically.



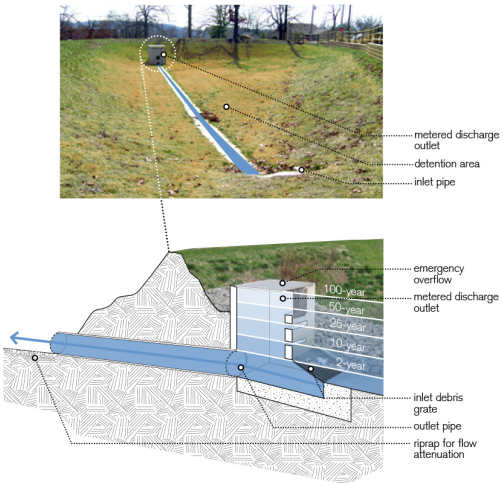
References:
Low Impact Development Manual for Michigan
Minnesota Urban Small Sites BMP Manual
EPA Storm Water Technology Fact Sheet-Wet Detention Ponds

Detention Pond

Detention ponds, or dry ponds, are stormwater basins designed to intercept stormwater runoff for temporary impoundment and metered discharge to a conveyance system or a receiving waterbody.

Detention ponds are designed to completely evacuate water from storm events, usually within 24 hours. They primarily provide runoff volume control reducing peak flows that cause downstream scouring and loss of aquatic habitat. As a general rule, detention ponds should be implemented for drainage areas greater than 10 acres. On smaller sites it may be difficult to provide control since outlet diameter specifications needed to control small storm events are small and thus prone to clogging. Also, treatment costs per acre are reduced when implemented at larger scales.

Re-suspension of settled material is a large concern in these systems, requiring periodic sediment, debris, and pollutant removal. Detention ponds do not provide infiltration and are therefore best used within a network that provides biological treatment.



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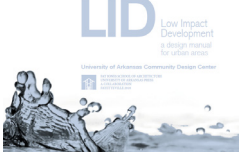

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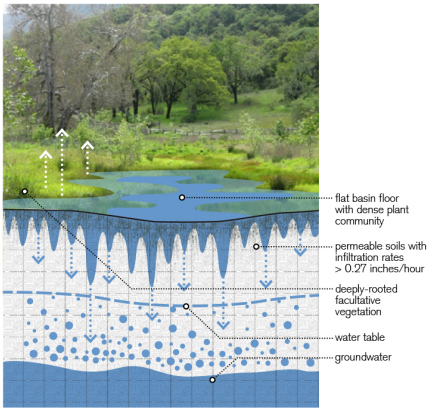
Infiltration Basin

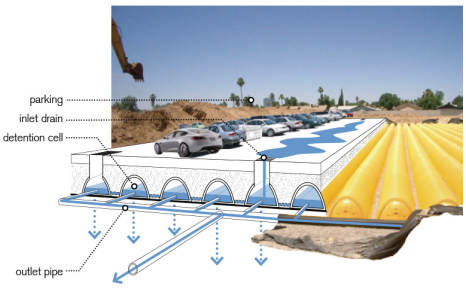
Infiltration basins, or wet meadows, are shallow impound areas with highly permeable soils designed to temporarily detain and infiltrate stormwater runoff. They do not retain a permanent pool of water.



References:
Low Impact Development Manual for Michigan
Minnesota Urban Small Sites BMP Manual

Underground Detention

Underground detention systems detain stormwater runoff prior to its entrance into a conveyance system.



References:
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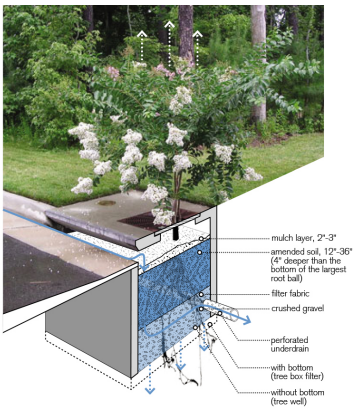
Tree Box Filter

A tree box filter or in ground well consists of a container filled with amended soil and planted with a tree, underlain by crushed gravel media.



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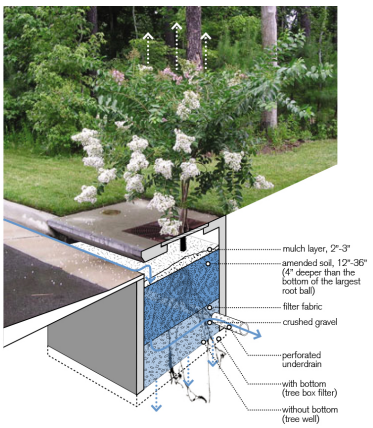

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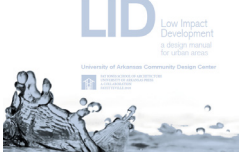

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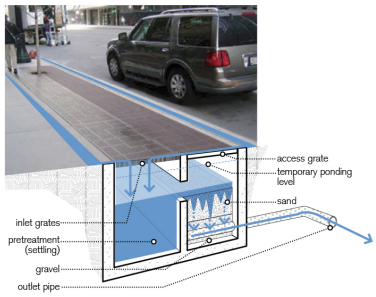
Underground Sand Filter

An underground sand filter is a three chambered system that pretreats, filters, and temporarily stores the first flush of stormwater runoff.



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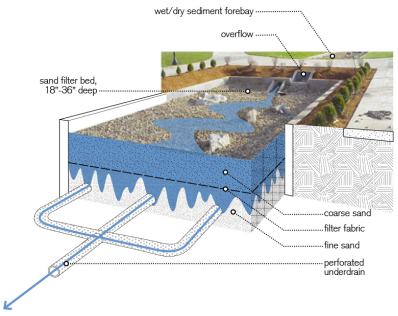
Minnesota Urban Small Sites BMP Manual

Surface Sand Filter

Also known as a filtration basin, a surface sand filter utilizes a flow splitter, wet/dry sedimentation forebay, and sand filter bed to manage nutrient loads in the first flush of runoff.



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