

COMPLETE STREETS FOR CLEARWATER IMPLEMENTATION PLAN



City of Clearwater
June 2019

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Approved:
June 20, 2019 by Resolution No. 19-08

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EXECUTIVE SUMMARY



EXECUTIVE SUMMARY

The City of Clearwater's vision to be a uniquely beautiful and vibrant community that is socially and economically diverse, invests for the future, and is a wonderful place to live, learn, work, visit, and play requires a well-balanced transportation system. This balance must meet the needs of all users with a variety of options to reach their destinations. Complete Streets support the development of a network of streets that are designed based on the street context and character of adjacent land uses to provide people of all ages and abilities with safe, comfortable travel. They also help create a network of connected streets and direct resources to improving crossing streets at intersections and other locations. Providing options allows for a more equitable transportation system, as not all residents own vehicles or are able or want to drive. Complete Streets address safety by providing effective, proven countermeasures to improve conditions at crash locations, for specific crash types, and where the public perceives a lack of safe travel options. Finally, numerous studies have shown that Complete Streets support economic strength and growth, a valuable outcome for a city with significant tourism and a large number of service employees.

Understanding the importance of Complete Streets, the City started the process of developing a plan in late 2017. The Complete Streets for Clearwater Implementation Plan was created to establish a framework for the City and its departments to incorporate and construct Complete Streets designs as part of its infrastructure programming.

The Plan is delivered in three main sections, plus an Appendix:

- **Section 1** - Introduction
- **Section 2** - Flexible Street Design Considerations
- **Section 3** - Actions for Implementation
- **Appendix**

EXECUTIVE SUMMARY

Section 1 justifies the need for Complete Streets and the goals of the City and community. It explains why Complete Streets are necessary, the Guiding Principles, and existing conditions and future considerations within the City of Clearwater.

The existing conditions data and statistics support the need for Complete Streets to address safety and to increase multimodal transportation options in the City. Between 2013 and 2017, there were over 17,000 traffic crashes in Clearwater, a number that included pedestrians, bicyclists, motorcyclists, and vehicles. These crashes resulted in 50 fatalities and 380 incapacitating injuries that significantly impacted the lives of many family and friends.

There is also a clear demand for transportation options; currently, 11% of households in Clearwater do not own a vehicle and a person with a disability lives in 23% of the city's households. Also, even though the Pinellas Suncoast Transit Authority (PSTA) is one of the more underfunded transit systems for a large metro area, nearly 3% of people in Clearwater use transit for commuting. Complete Streets aim to increase options and safety for all modes of transportation through flexible street designs that provide safe, efficient travel for all modes and people.

The Guiding Principles provide a framework of outcomes based on why Complete Streets are needed. These outcomes are in turn used to measure success and adjustments towards creating a complete multimodal transportation system. Community residents and stakeholders helped form the Guiding Principles and the Complete Streets Implementation Plan. They shared their knowledge and desires, indicating what existing conditions need to be improved and what types of facilities they would most like to see in the future. The top priorities identified by the public were shared-use paths/trails, sidewalks, intersections and other pedestrian crossings, and bicycle facilities. A common theme of Complete Streets and the Guiding Principles is that streets need to serve people first and foremost.

Section 2 provides a framework for changing how streets are designed - from primarily serving a single mode, automobile travel, into a modern street design process that considers how all people and modes use the transportation network. This section creates a flexible street design framework, including a toolkit of design details to be added to planning and engineering guidelines for City streets, that modifies the conventional decision-making process by focusing on three main characteristics — street type, existing infrastructure and plans, and most importantly surrounding land use context, all of which are integral in the development of Complete Streets.

Street type is based on the function of the road within the larger transportation network and its role in terms of safety and modal options. The plan provides four categories of street types for the City of Clearwater—thoroughfare, community connector, local collector, and local street. This section also categorizes the City's various land use contexts: Suburban, Urban Residential, Urban General, Urban Edge, and Urban Core. In addition, two special districts with different characteristics were identified and made distinct: Special District - US 19 following the US 19 Redevelopment Plan and Special District – Industrial. Additionally, the Plan discusses the importance of understanding existing infrastructure and plans, including the amount of right-of-way available, characteristics of the street, or other corridor studies/plans for a particular street as part of the design process, since rarely are there no constraints in an infrastructure or street improvement project, and design adjustments may be required.

A major component of this section is Street Design, which applies the previously discussed components to the City in the form of a map series showing the different context zones and street types and a series of context design matrices. The matrices address the different parts of a street, broken into the Pedestrian Realm, Curb and Gutter, and the Traveled Way. Planning level guidance regarding preferred sidewalk widths, bicycle recommendations, transit recommendations, desired operating speeds, and other street characteristics, such as street lane widths and crossings is calibrated to the land use context and street type.

Information on different Complete Streets improvements follows the context design maps and matrices presenting a wide range of smaller improvements, including painted pavement, trees and landscaping, and crossing improvements. Additionally, Complete Streets case studies are included which demonstrate measured results from installations in several cities.

Section 3 identifies actions that will ensure that Complete Streets principles are a foundational part of infrastructure projects in the City moving forward. The actions are broken into four main themes—policy and regulatory improvements, project delivery and process improvements, capital improvements projects, and measuring and evaluating performance. Twenty-five actions are recommended in the Plan, which are further grouped by timeframe (short-term, mid-term, long-term, and on-going). Additional details are provided on many of the key actions.

Recognizing the importance of measuring and evaluating performance of projects, and local and regional programs over time, this section also establishes performance measures for each Guiding Principle identified in Section 1. The measures should be reviewed and refined over time and are to be used to understand the level of success of the Plan and the City's Complete Streets efforts.

Lastly, the **Appendix** provides additional data and information from public and stakeholder outreach, as well as more design standards and plans, and information on existing conditions and future considerations.

Implementation of the actions described in Section 3, as well as the utilization of the tools presented in Section 2 should start now. Successful attainment of the Guiding Principles needs to be measured not only on a Citywide level, but on a project by project basis, in order to make adjustments when needed and to apply lessons learned to future projects. Pre-project and post-project data gathering is strongly recommended. The Plan should be revisited continuously and updated within the next five years.

In conclusion, a balanced transportation system is not just about providing people with a variety of safe travel options; it is about creating the healthful quality of life that makes people want to live, work, and be proud to be part of the City of Clearwater. When placemaking experts talk about public spaces where people want to gather and socialize, streets are the largest component of public space in most cities. By acknowledging the important role that Complete Streets can play in ensuring that city streets serve all people of all ages and abilities, the City of Clearwater welcomes all to our Bright and Beautiful, from Bay to Beach home.

Section 1

INTRODUCTION

- Why Complete Streets
- Guiding Principles
- Existing Conditions and Future Considerations
- What We Learned



1. INTRODUCTION

Why Complete Streets

Complete Streets provide people of all ages and abilities with safe and comfortable travel options, regardless of their mode of travel, including walking, biking, riding public transit, moving freight, or using a car. The intent is to provide a network of streets and balanced transportation options that are safer and more efficient for everyone, while recognizing that not every street should serve every means of travel equally. While some roads will assign a higher priority for motorized vehicles and freight, others will emphasize less intense modes of travel by walking or bicycling. However, all roads need to provide safe accommodation for other modes. To achieve the goal of Complete Streets as a holistic transportation system, the system must allow all people to get to their destinations using a variety of mobility options, whether by necessity or by choice. That is why a Complete Street is a means to an end as part of a balanced street network that forms a Citywide mobility system to get people to their destinations, and not defined as a single road or corridor.

How is this accomplished? Complete Streets combine an analysis of how surrounding land uses and the transportation network accommodate the way that residents, businesses, and transportation users interact with the street, and how they could be better served. [Section 2](#) provides guidance on this “flexible street design.” Many, if not most, Complete Streets projects are add-ons to other projects. As noted above, Complete Streets support a vision of Citywide mobility. Small projects and continuous incremental modifications work to achieve this goal. This approach requires cooperation and coordination among the many City departments and other agencies involved in infrastructure improvements and maintenance. To this end, suggested departmental assignments are included as part of the Action Items listed in [Section 3](#).

Guiding Principles

The City of Clearwater’s vision is to be a uniquely beautiful and vibrant community that is socially and economically diverse, invests for the future, and is a wonderful place to live, learn, work, visit, and play. A well-balanced transportation system supports this vision. The following Guiding Principles support the planning process for a complete multimodal transportation system and provide outcomes by which to measure the system’s success. A common theme of Complete Streets and the Guiding Principles is that streets serve people first and foremost. [Section 3](#) provides the performance measures to evaluate levels of success in achieving the Guiding Principles.

INTRODUCTION

Safe, Comfortable Travel

Provide safe and comfortable options to **reduce crashes and encourage non-automobile travel**

Allow all street users to **be safe and feel safe**



Transportation Accessibility

Develop a **transportation system** that provides **ease** and **efficiency** for all modes of transportation



Multimodal Mobility

Build a transportation system that provides a variety of multimodal **travel options**

Develop a **regional transportation network** that adapts to technological changes to achieve the City's **mobility and economic goals**



Connected and Inviting

Encourage walking, biking, and accessible transit use through a system of **well-connected streets**

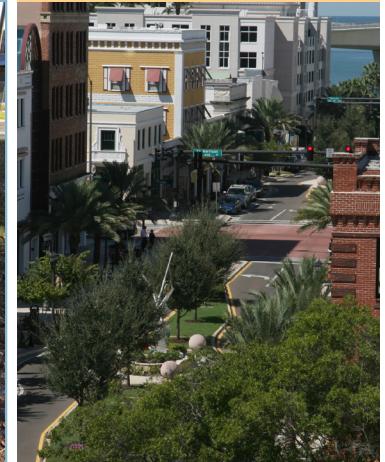
Protect neighborhood streets as **inviting spaces** to walk and bike as part of a **connected network**

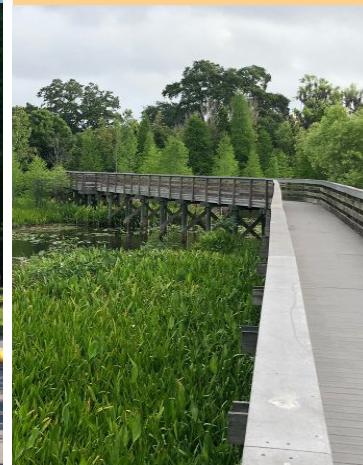


Economic Vitality and Placemaking

Support local businesses by providing **safe, convenient access** for residents, employees, and customers who **walk, bike, ride transit, or drive**

Incorporate **signage and wayfinding** to identify distinct and unique places within the City



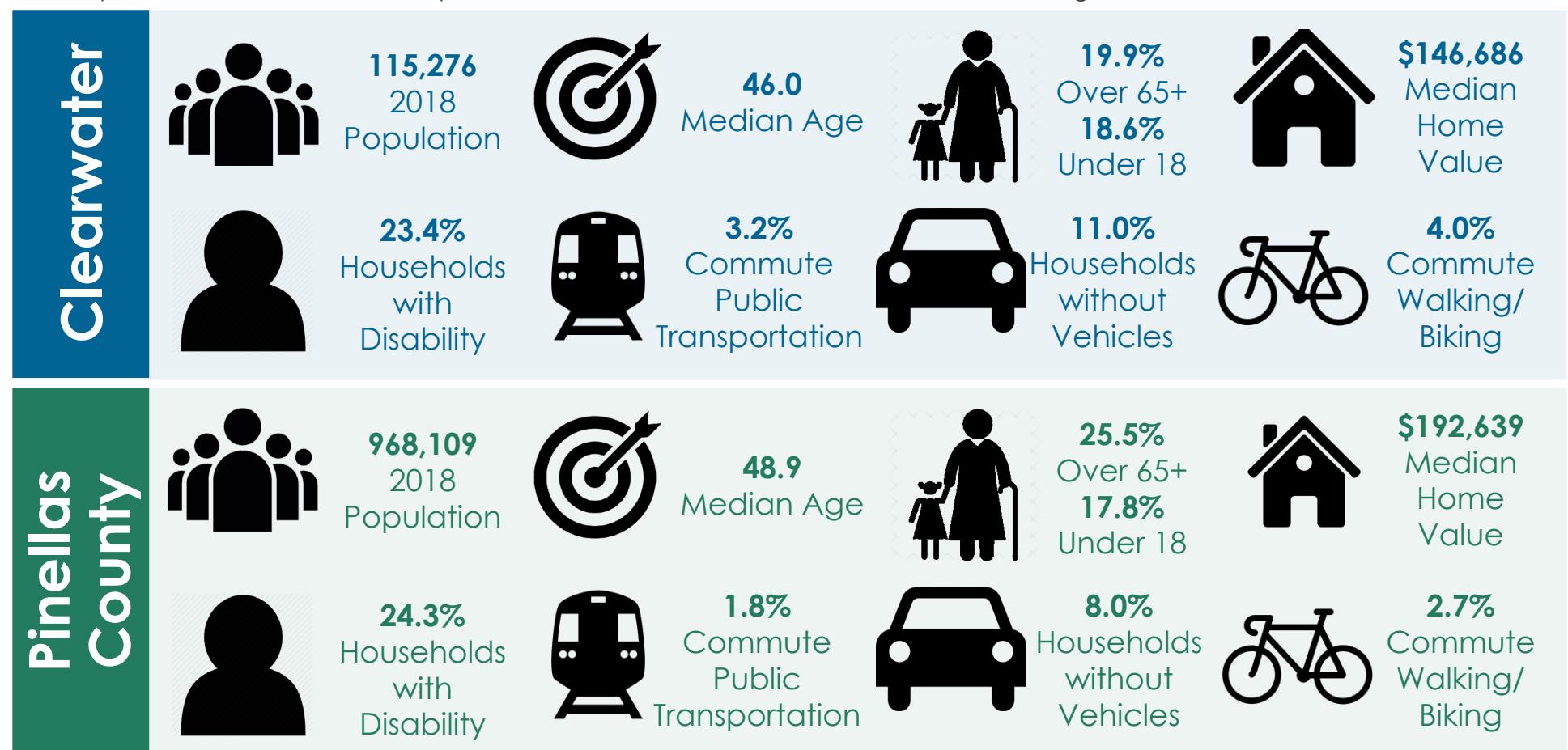
| Community Health | Social Equity and Investment | Community Character and Context Sensitivity | Environmental Protection and Sustainability | Technology |
|---|---|--|---|--|
| <p>Promote active transportation (walking, cycling, transit) to improve health and reduce chronic diseases</p> <p>Improve air and water quality by reducing the number of vehicles on the road</p>  | <p>Plan streets as pathways for people of all ages, abilities, races, and incomes to socially interact and be able to travel using affordable modes of transportation</p> <p>Design streets to serve people with the greatest need, which improves mobility and access for all people</p>  | <p>Respect and enhance neighborhood identities, character, history, and cultural context</p> <p>Support different context and features like natural resources, public art, aesthetics, views, and gateways</p>  | <p>Protect the natural resources and environment with a balanced transportation plan</p> <p>Increase non-automobile forms of travel to reduce greenhouse gases and pollution</p>  | <p>Improve mobility services and encourage alternate modes of travel through technology</p> <p>Apply technological innovations to enhance options and equitable access to multimodal transportation</p>  |
| | | | | |

INTRODUCTION

Existing Conditions and Future Considerations

Who We Are Serving

Existing demographics, economy, travel behavior, and economic characteristics are important considerations when planning and designing Complete Streets. One goal of the Plan is to provide people with choices in how they travel, be it walking, biking, riding transit, driving a car, or a combination of these means. But the choices for many residents do not include a car. According to Jeff Speck in Walkable City Rules, “One third of Americans can’t drive. As of 2015, more than 103 million of America’s 321 million people did not possess a driver’s license. Many more had licenses, but did not feel comfortable driving.”



Source: 2018 Community Analyst by ESRI

Functional Considerations

The first step of the planning process is to evaluate the existing transportation network and identify opportunities and challenges to crafting a well-connected, accessible, and safe multimodal transportation system. Every street has functions and surrounding land uses that shape the facilities suitable to create a complete corridor. Consider the following general influences when assessing what form of Complete Streets best serves the people who use the street:

Citizens of Clearwater

- Connect citizens to residences, employment, and commercial options
- Provide safety and accessibility on all roadways
- Serve disadvantaged populations who can't drive

Consider: How can Complete Streets accommodate and best serve the growing population and employment base in Clearwater?

Regional Travel

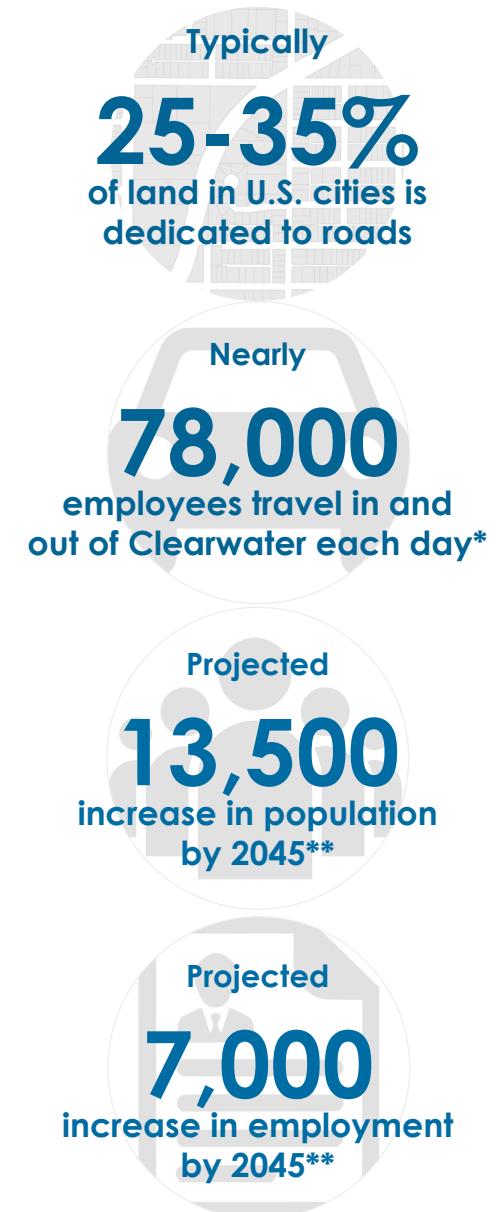
- Increase connectivity between origins and destinations in Pinellas and Hillsborough counties
- Improve travel on state roads such as US 19, SR 60, and major corridors including Belcher Road

Consider: How can Complete Streets help residents and workers commute more safely and efficiently?

Tourism

- Improve access to Clearwater for visitors who arrive at regional and statewide airports
- Increase tourism to strengthen the City's economy
- Improve management of increased traffic on City corridors and provide options for tourists without access to vehicles to support the growth of tourism

Consider: How can Complete Streets help Clearwater maintain and expand its renowned tourist economy?



*On the Map with US Census Bureau Data

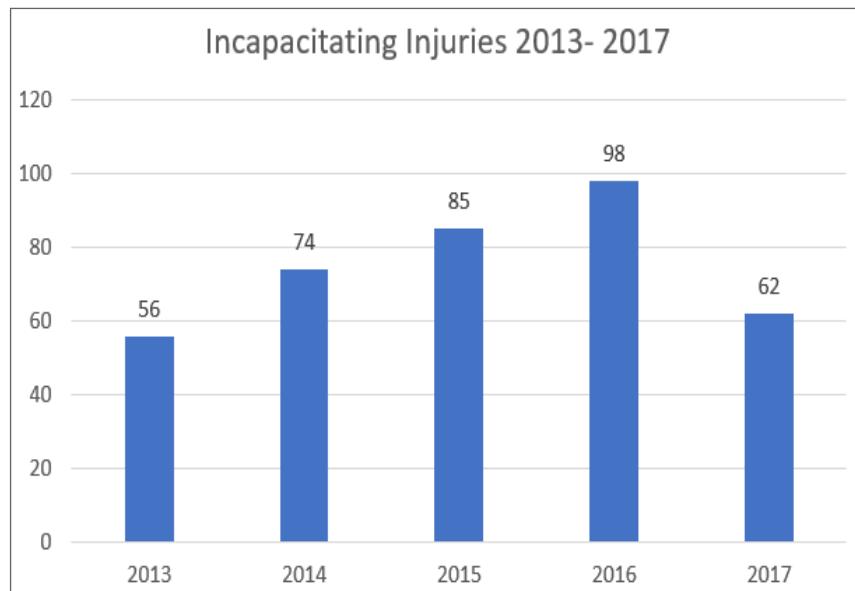
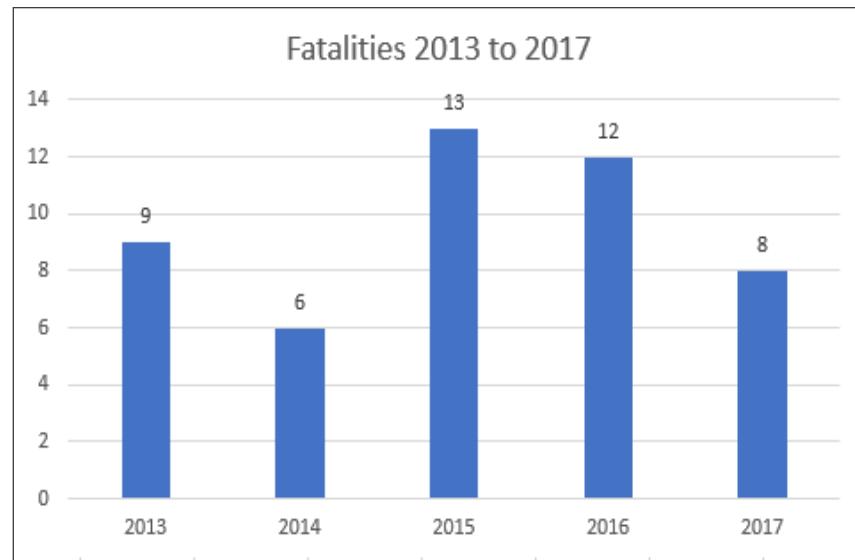
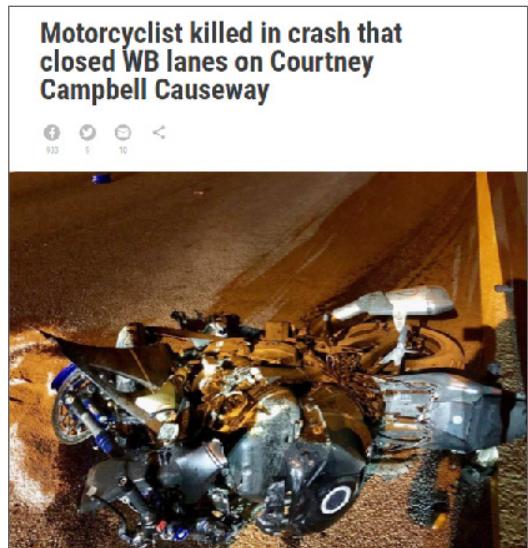
**Forward Pinellas Data

INTRODUCTION

Safety

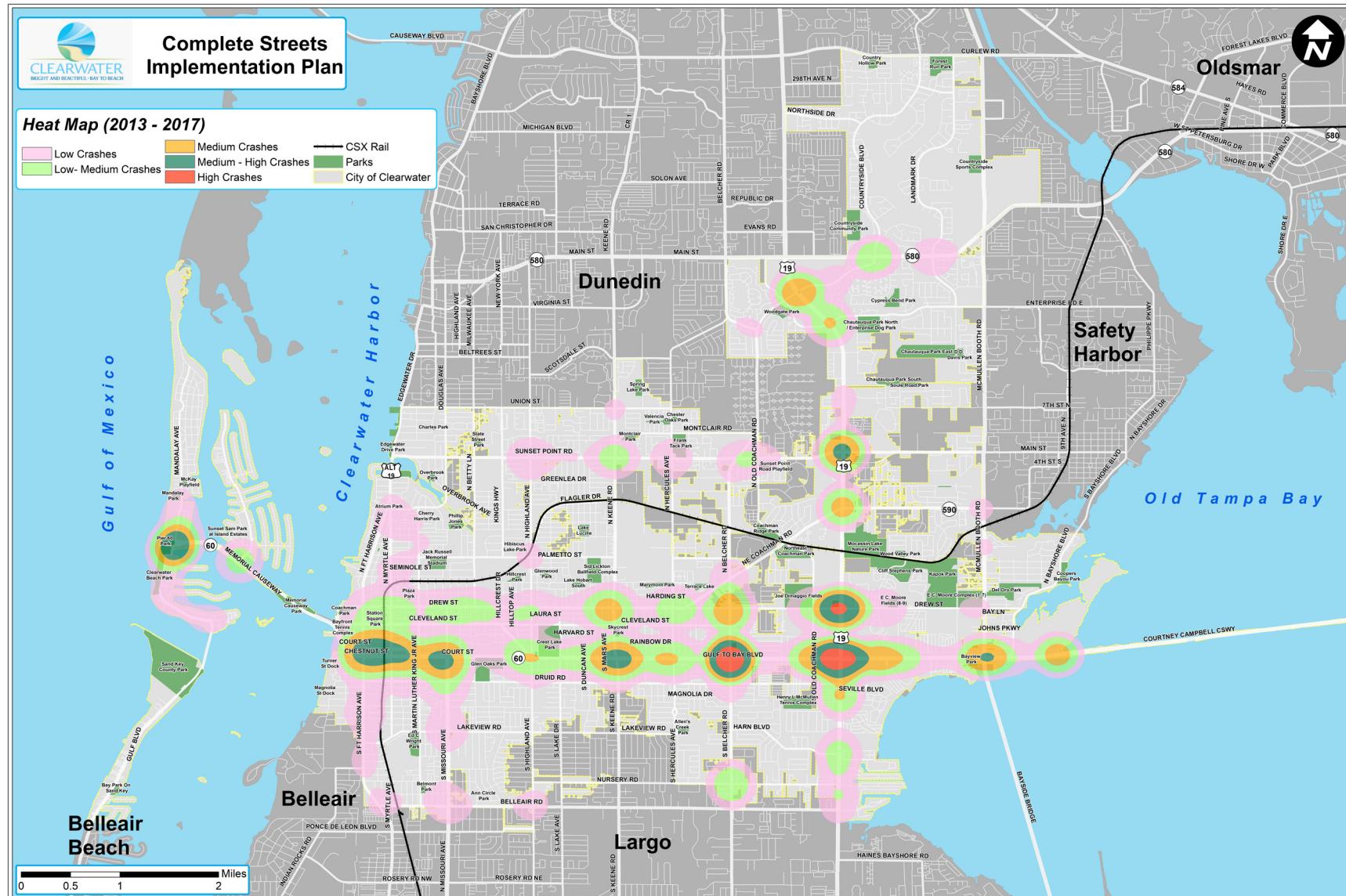
One of the main Guiding Principles is improving safety as people need to feel safe in every transportation option. Safety is measured by crash data as well as the perception of safety. The Tampa Bay area has made great strides in improving safety, but continues to be ranked in the top ten cities in the “Dangerous By Design” report produced by Smart Growth America. Over the five year period between 2013 and 2017, there were almost 17,000 crashes involving pedestrians, bicyclists, motorcyclists, and vehicles in the City of Clearwater. A large number of people were injured or killed in the City during that period.

- 50 fatalities
- 380 incapacitating injuries
- 224 pedestrian crashes (23 fatalities, 47 serious injuries)
- 226 bicycle crashes (4 fatalities, 34 serious injuries)
- 16,407 vehicle crashes
- 16,897 total crashes 2013-2017



Traffic Crash Hot Spots

The following heat map indicates the distribution of crashes that involved pedestrians, bicyclists, motorcyclists, and vehicles in the City of Clearwater from 2013 to 2017. Red and dark green nodes indicate the highest crash areas. Note the highest crash locations are at major intersections where all modes meet.



INTRODUCTION

What We Learned

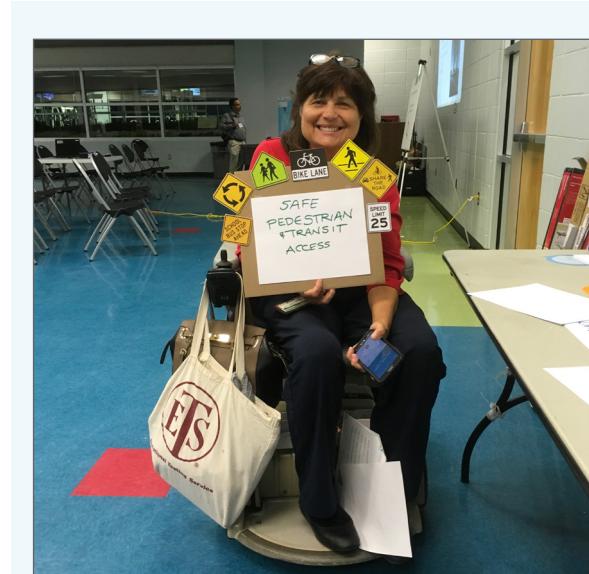
The development of this Implementation Plan included several public outreach activities to obtain local and regional feedback on transportation objectives, priorities, challenges, and opportunities. Outreach included three meetings with the Complete Streets Advisory Committee and two public workshops with interactive activities to gather public input. An online survey gathered 190 comments from over 900 participants. These activities assisted the City in crafting its final recommendations. The key points below were developed from public participation at the outreach events. More information can be found in the [Appendix](#).

Stakeholder and Community Outreach

- Advisory Committee #1 (May 1, 2018)
- Advisory Committee #2 (July 10, 2018)
- MetroQuest Survey (October - December 2018)
- Community Workshop #1 (October 23 and 24, 2018)
- Advisory Committee #3 (December 4, 2018)
- Community Workshop #2 (February 12, 2019)

Key Points

- Improving safety and providing multimodal options are the top priorities
- Top requested improvements
 - Shared Use Paths/Trails
 - Sidewalks
 - Intersection Improvements
 - Pedestrian Crossings
 - Bicycle Facilities (with separate facilities or barriers to vehicles)
- Specific Problem Areas
 - Drew Street
 - Gulf to Bay Boulevard
 - Countryside Boulevard area
 - Cleveland Street



Community Workshop #1



Advisory Committee Meeting #1



Section 2

FLEXIBLE STREET DESIGN

- Design Considerations
- Street Type
- Context Classification Systems
- Infrastructure and Plans
- Street Design



2. FLEXIBLE STREET DESIGN

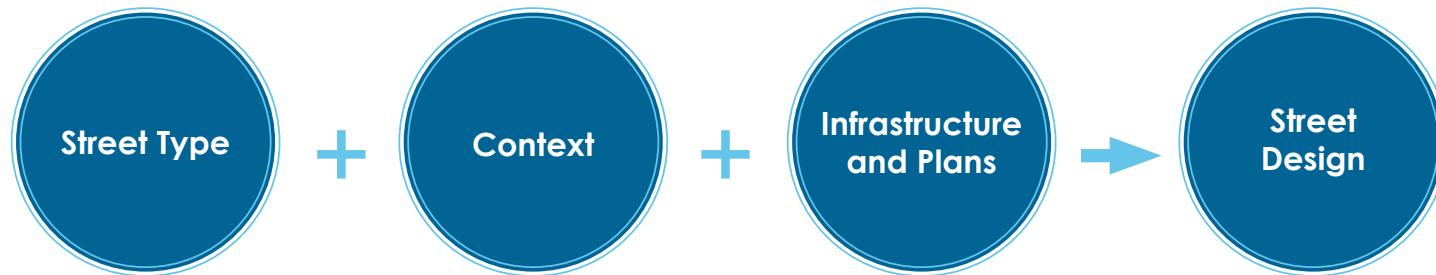
Since the mid-20th century, the decision-making process for street improvements has been focused on moving a given amount of automobile traffic based on the street's functionality. Street design was one goal fits all, focused almost exclusively on automobiles regardless of the urban or suburban land use context. Sidewalks and bicycle facilities were added if sufficient right-of-way was available. The flexible design, context-sensitive approach flips that conventional decision-making process and considers context first. As depicted in the graphic at the bottom of the page, a flexible decision-making process considers how all people and modes use the transportation network.

Street characteristics and surrounding land uses must inform the design process

This section provides flexible street design guidance for City staff and private developers in planning a transportation network that is in tune with the varying land use contexts within the City. This guidance is for planning purposes and not meant to meet engineering standards.

Design Considerations

Street characteristics and surrounding land uses must inform the design process, which considers those characteristics when planning for people's mobility needs. This guide provides different street designs based on street type and land use context classifications for the City of Clearwater, given the understanding that street design standards may be constrained. The space available may be insufficient for all desired modal improvements and compromises may be necessary to optimize the balance between modes. A community's context and land use impacts the design process as certain users and modes have priority or minimum required standards. Lastly, any existing or new policy changes by the City or other agencies may impact the operation of the street in terms of capacity and context. This document provides a street design baseline; additional considerations and constraints may require design adjustment.



FLEXIBLE STREET DESIGN

STREET TYPE

CONTEXT

INFRASTRUCTURE AND PLANS

STREET DESIGN

Street Type

Street types breakdown the classification and characteristics of streets, where the designation of roadways is based on factors such as regional or local trips, trip types, right-of-way, design speeds, travel times, capacity, and inter-connected roadway access. The essence of street types is based on the function of the road within the larger transportation network and its role in terms of safety and multimodal options. For the City of Clearwater, street types are described within four categories: thoroughfare, community connector, local collector, and local streets. The table below offers descriptions and local examples of each category.

Street Type Categories

| Category | Functional Classification (FDOT) | Local Examples | Characteristics |
|---------------------|----------------------------------|--|---|
| Thoroughfare | Principal Arterials | US 19, SR 580, Gulf to Bay Boulevard (SR 60) | Regional connectors, vehicle dominant, freight, high speeds, limited/managed access (US 19) |
| Community Connector | Minor Arterials | Alt. US 19, Keene Road, Drew Street, Belcher Road, Fort Harrison Avenue, Sunset Point Road | Local and City connectors, medium speeds, freight, limited pedestrian and bicycle facilities, highly accessible for vehicles |
| Local Collector | Major and Minor Collectors | Druid Road, Countryside Boulevard, Mandalay Avenue | Local/neighborhood connectors, medium-low speeds, pedestrian and bicycle facilities, local and neighborhood access |
| Local Street | Local Streets | Osceola Avenue, Pierce Street, Saturn Avenue | Neighborhood streets, local collector access, larger street access, low speeds, on-street parking and pedestrian and bicycle facilities (on/off street) |

Context Classification Systems

Clearwater Context Classification

FDOT created eight context classifications that indicate the wide variety of existing built environments. These context classifications are based on land use, development patterns, roadway connectivity, and future land use considerations. Identifying the context classification improves the functionality of a roadway. This approach standardizes the decision process by choosing from design elements that fit that context. Five of the eight FDOT classifications apply to the City of Clearwater due to the lack of rural contexts. The FDOT Context Classifications and context diagram are provided in the [Appendix](#). The five FDOT classifications applicable to Clearwater are:

- Suburban Residential (C-3R)
- Suburban Commercial (C-3C)
- Urban General (C-4)
- Urban Center (C-5)
- Urban Core (C-6)

The City of Clearwater classifications expand the FDOT list as the City has unique land use patterns that require two additional context classifications: Urban Residential and Special Districts. The City classifications are:

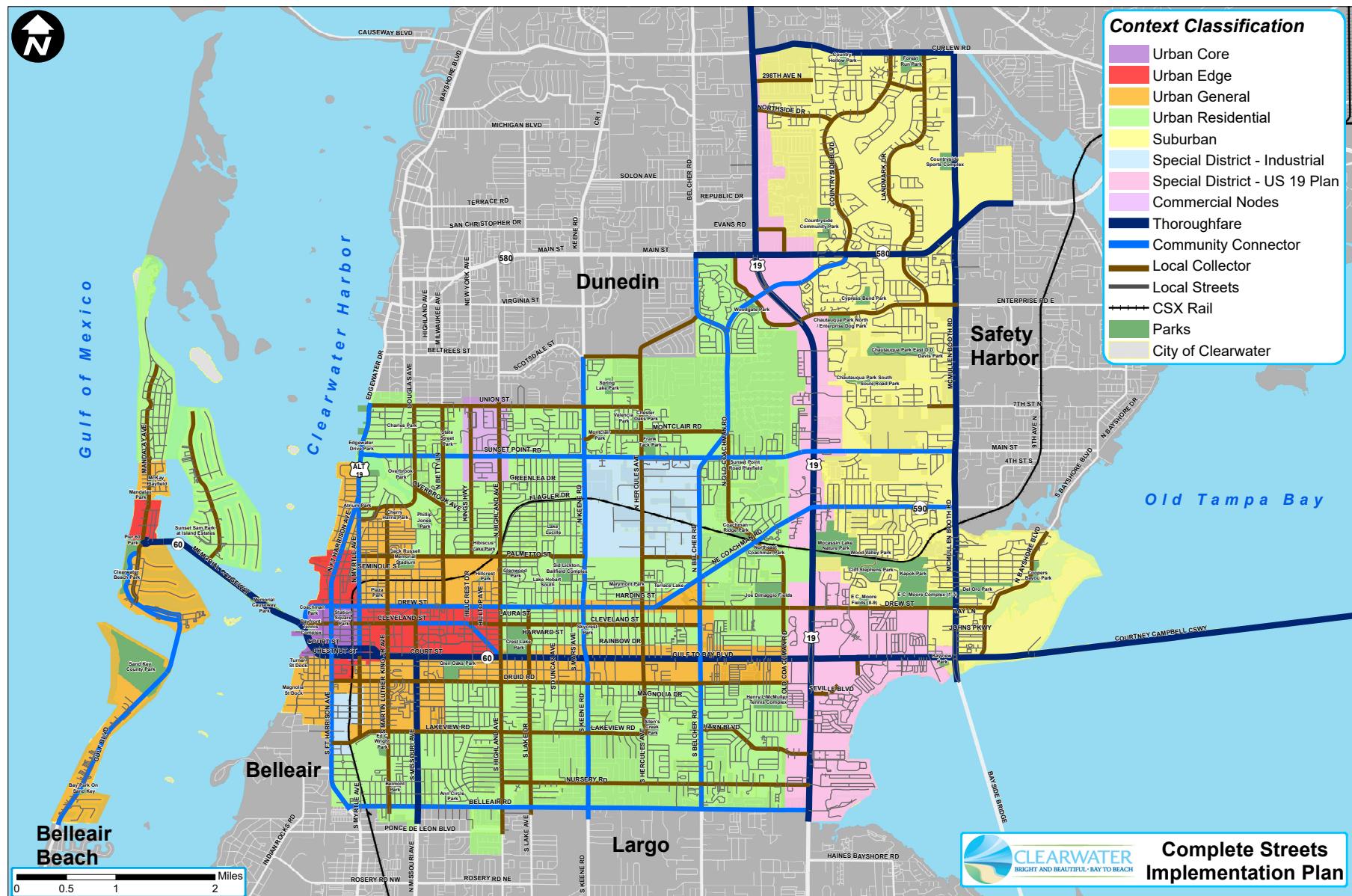
- Suburban (combining residential and commercial)
- Urban Residential
- Urban General
- Urban Edge
- Urban Core
- Special District - Industrial
- Special District - US 19

These classifications, described on the next page, allow for a more nuanced approach to development Complete Streets for Clearwater. As the City develops more detailed street plans, such as for Downtown, the context zones will guide the design of suitable facilities. Specific transportation and land use descriptions for all classifications within Clearwater are depicted in the matrices and maps provided in this section of the Plan.

FLEXIBLE STREET DESIGN

| STREET TYPE | CONTEXT | INFRASTRUCTURE AND PLANS | STREET DESIGN |
|--------------------------------------|--|---|--|
| Land Use Context Type | Description | Building Placement and Parking | Land Uses |
| Urban Core | Area with the highest density and an integrated mix of uses. Mainly multiple story and attached buildings with high pedestrian, transit, and bicycle activity. This includes the core of Downtown Clearwater. Short blocks and high street connectivity. | Building frontage is at street level and parking is on-street, in a garage, or in the rear of the building. | Commercial, Restaurants, Retail, Office, Institutional/Civic, Multi-Family Residential |
| Urban Edge | Buffer between the urban general and urban core areas. High street connectivity. Multiple story and attached buildings with on-street parking. This context type has increased speed limits for some street, but is still a high transit, pedestrian, and bicycle area. Includes some downtown and beach areas. | Building frontage is at street level and parking is on-street or in the rear of the building. | Commercial, Restaurants, Retail, Office, Institutional/Civic, Multi-Family Residential |
| Urban General | Mix of both commercial and residential areas. High density than an urban residential context area. Connected and small blocks, but larger block lengths than the downtown context types. | Larger building setbacks than the Urban Core and Urban Edge zones. Parking is usually in the rear or side of the building, but on-street is encouraged in denser residential areas. | Single-Family or Multi-Family Residential, Institutional/Civic, Neighborhood-Scale Retail, Office |
| Urban Residential | Mainly residential but can include a mix of commercial and residential areas, mix of offices, multi-family, and single-family. Higher density than a suburban context type with smaller parcels and a traditional street grid for greater connectivity. | Larger building setbacks than the Urban General context type. Parking is usually on-street. | Single-Family or Multi-Family Residential, Institutional/Civic, Neighborhood-Scale Retail, Office |
| Suburban | Residential and non-residential areas with detached buildings. Roadway network lacks connectivity in certain areas, culs-de-sac, larger lots. | Lower density than urban areas, with larger setbacks, building footprints, and block lengths. Parking is mainly surface parking lots in front of the building. | Single-Family or Multi-Family Residential, Box Stores/In-Line Retail, Institutional/Civic |
| Special District - Industrial | Non-residential uses, includes industrial areas. | Lowest intensity zone with larger setbacks, buildings footprints, and block lengths. Parking is off-street surface lots to accommodate freight traffic. | Warehouses, Manufacturing, Freight, Other Industrial Uses, Research & Development |
| Special District - US 19 | Redevelopment area comprised of a mix of commercial, office and residential uses, primarily connected by major state roadways and frontage roads along US 19. Although block sizes are larger than typical urban contexts, development standards are in place to require connectivity, pedestrian ways, and other site and building designs to maximize mobility, access and safety. | The US 19 District identifies pedestrian- and transit-oriented frontages along major streets and frontage roads, and limits front setbacks, prohibits front parking, and requires buildings oriented to sidewalks in these areas. In other areas, front parking is permitted. | Office, Multi-Family Residential, Retail, Hotels, Research & Development, Institutional, Light Manufacturing |

Community Context Map



FLEXIBLE STREET DESIGN

STREET TYPE

CONTEXT

INFRASTRUCTURE AND PLANS

STREET DESIGN

Infrastructure and Plans

Opportunities for Complete Streets arise from a variety of projects managed by different departments but may impact existing infrastructure above and below ground. It is important that the project review process involve a wide spectrum of City divisions, including traffic operations, stormwater, utilities, planning, and parks and recreation. In addition, rights-of-way and corridor studies or plans must be considered before incorporating specific street design elements. Incorporating Complete Streets components into other projects may impact infrastructure which needs to be accounted for in the project budget. Complete Streets designs do not supersede required federal and state roadway design standards.

Right-of-Way

Clearly defining the function of a street and the surrounding land use classifications (existing and future) are the initial steps to an efficient and safe Complete Streets design. Determining the necessary amount of right-of-way for the selected design requires understanding these factors to anticipate the transportation needs of the area. When the right-of-way is constrained, the role of design features based on modal priority becomes even more important, depending on the street type, context classification, and alternative corridors or routes. Land acquisition or easements may be an answer to insufficient right-of-way, but acquisition can be a costly and complex process. Often, it will be more effective to determine which street features should have priority and compromise on non-priority features. However, a balanced design should still meet minimum standards for all modes.

In conjunction with street function, land use context, and right-of-way constraints, the Average Annual Daily Traffic (AADT) volumes shall be reviewed to help determine the most appropriate number of lanes and Complete Streets design. AADT, in conjunction with other factors, generally indicate where lane eliminations or re-purposing are appropriate. Additional factors that shall be reviewed as part of the process are crash history data and type, modal priority and capacity for a corridor, and drop off zones (freight or rideshare) if applicable.

Clearwater Plans and Studies

Corridor studies and land use plans also play a role in successful planning for multimodal connectivity and network improvements. Encompassing the goals, design guidance, and modal considerations of these studies and plans in the project review process helps ensure that Complete Streets projects support a well-crafted transportation network, where consistent and connected street improvements benefit the surrounding land uses. This Plan provides a flexible design matrix and toolkit to support the cohesive and consistent development of Complete Streets for the City of Clearwater.

Street Design

The Street Design portfolio includes multiple references and components for guidance and inspiration designing Complete Streets enhancements. These standards should be consulted for appropriate solutions, based on the street type, context, and roadway conditions. The context design matrix and flexible street design toolkit in the following pages provide design features and elements for different parts of the street and modes that were selected from the reference guides below.

Design Standards and Plans

In conjunction with already established City engineering standards and Federal and State design standards, the guidance in this Plan helps establish flexible design parameters. Complete Streets designs do not supersede required federal and state roadway design standards. The National Association of City Transportation Officials Design Guidebooks (NACTO) increase Complete Streets options by providing more recently accepted innovative multimodal designs. The following standards and guidelines were reviewed:

- NACTO Urban Street Design Guide
- NACTO Urban Bikeway Design Guide
- NACTO Urban Street Stormwater Guide
- NACTO Transit Street Design Guide
- Florida Department of Transportation Design Manual (FDM)
- The American Association of State Highway and Transportation Officials (AASHTO): A Policy on Geometric Design of Highways and Streets (AASHTO Green Book, 7th Edition)
- US DOT Achieving Multimodal Networks: Applying Design Flexibility and Reducing Conflicts
- Institute of Transportation Engineers (ITE) Designing Walkable Urban Thoroughfares: A Context Sensitive Approach
- ITE Implementing Context Sensitive Design on Multimodal Thoroughfares: A Practitioner's Handbook
- City of Clearwater Engineering Standards
- City of Clearwater Community Development Code
- Manual on Uniform Traffic Control Devices (MUTCD)
- Other Multimodal Corridor Studies and Plans (SR 60, US 19, Drew Street, Alternate US 19, etc.)
- Florida Fire Prevention Code

FLEXIBLE STREET DESIGN

STREET TYPE

CONTEXT

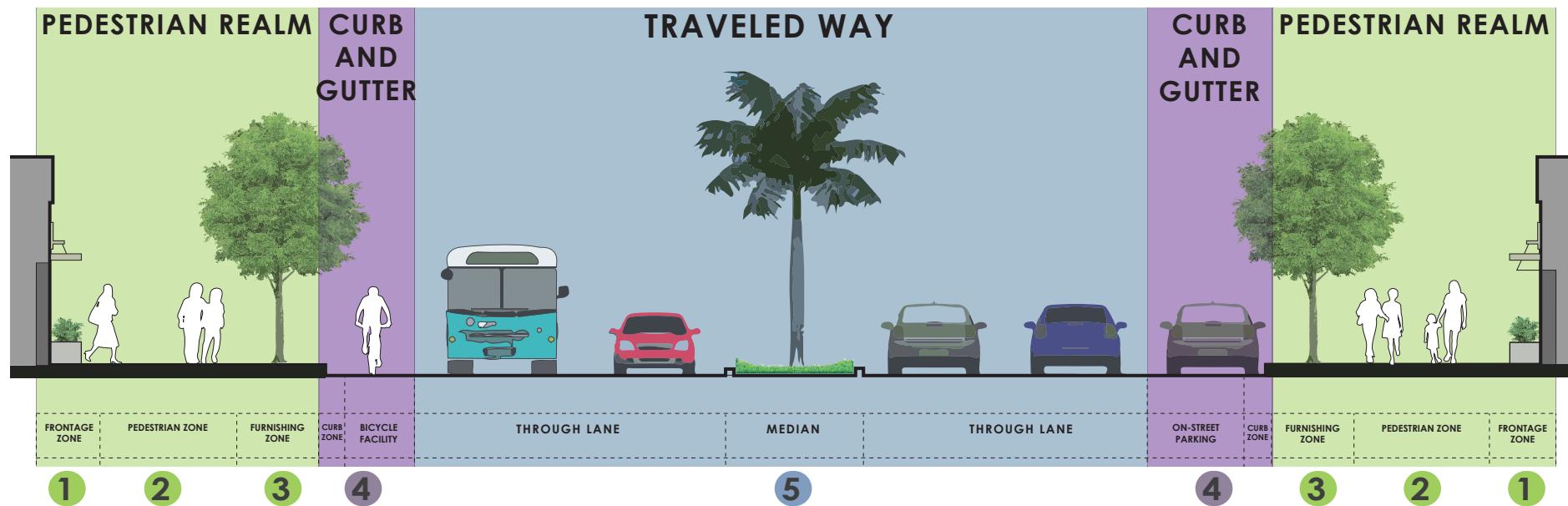
INFRASTRUCTURE AND PLANS

STREET DESIGN

Street Zone Elements

The application of street zones in designing and implementing Complete Streets is a practical way of dividing the right-of-way profile into realms that serve specific purposes. Elements that define and relate to these zones may include rights-of-way, crossing features, buffers, amenities, and green spaces. The context design matrix and map provides specific guidelines and elements for different street zones and realms. The following descriptions define each street zone and the variety of elements each zone contains.

Elements of a Street



| | STREET TYPE | CONTEXT | INFRASTRUCTURE AND PLANS | STREET DESIGN |
|-------------------------|--------------------------------|---|--------------------------|---------------|
| PEDESTRIAN REALM | 1. Frontage Zone | The frontage zone is an extension of a building to the sidewalk. This zone includes building facades and spaces that are directly adjacent to buildings such as entryways and doors or sidewalk cafés and outdoor dining seating. This zone defines and creates interactions between the building and pedestrian traffic. | | |
| | 2. Pedestrian Zone | The pedestrian zone is the primary travel pathway that runs parallel to the street. The through pathway should be 6 to 12 feet wide based on context (at least 8 feet wide in urban areas) to ensure safe and accessible travel for pedestrians. | | |
| | 3. Furnishing Zone | The furnishing zone is between the sidewalk and the curb. It may contain street lighting, landscaping, or benches. Impacts on and opportunities to optimize fire prevention and utility equipment locations will be part of the review process. Other features may include signage, transit stops, or driveways. | | |
| | 4. Curb and Gutter Zone | The curb and gutter zone is adjacent to and separates the traveled way from the pedestrian realm. Elements may include parking, curb extensions, stormwater management, and buffered or protected bike lanes (which can be found adjacent to the curb in some instances). | | |
| | 5. Traveled Way | The traveled way is the space used for street lanes (turning and through lanes), medians, crosswalks, and protected pedestrian refuges. This space is primarily used for automobiles, freight, transit, pedestrian crossings, and can include bicycles as well. | | |

FLEXIBLE STREET DESIGN

STREET TYPE

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How to Use the Context Design Matrix

A Context Design Matrix is developed for each context classification and based upon the Street Type and Street Zone shown on an accompanying map. The following tables provide a framework for preferred measurements, infrastructure, and design guidance for each street. Each project should be designed according to the modal priority and elements for the pedestrian, curb and gutter, and traveled way realms. Modal priority for pedestrians, bicyclists, transit, freight, and personal vehicles will be assessed as part of every project. Safety should not be compromised for one particular mode over another. These are not engineering standards and actions to implement are discussed in more detail in [Section 3](#).

| | | Street Type | | | | |
|--|-----------------|---|--|----------------------------------|-----------------------|--|
| | | Thoroughfare | Community Connector | Local Collector | Local Streets | |
| Context Classification Street Zone Elements | Urban Core | Frontage Zone | Refer to Downtown Redevelopment Plan and Beach by Design (intent is to create active pedestrian realm) | | | |
| | | Pedestrian Zone | 12' (8') | 12' (8') | 12' (8') | |
| | | Furnishing (landscaping, furnishing, utility) | Preferred | Preferred | Preferred | |
| | Curb and Gutter | Curb Zone | 2' | 2' | 2' | |
| | | Bicycle Recommendations | Separated or on Parallel Streets | Separated or on Parallel Streets | Neighborhood Greenway | |
| | | On-Street Parking | Analysis Recommended | Encouraged | Encouraged | |
| | Traveled Way | Transit Recommendations | High | High | Low | |
| | | Desired Operating Speed | 25-30 mph | 20-30 mph | 20-25 mph | |
| | | Number of Lanes | 4-6 Lanes | 2-4 Lanes | 2-4 Lanes | |
| | | Lane Widths | 11' | 10'-11' | 10'-11' | |
| | | Crossing Density | 1/8 mile | 1/8 mile | 1/8 mile | |
| | | | Design Guidelines | | | |
| | | | | | | |

Definitions within Context Design Matrix

Bicycle Recommendations:

Neighborhood Greenway: Streets with low speeds and low traffic volumes that support a connected network of bicycle routes. These streets are designated and designed to give bicyclists and pedestrians modal priority without the need to dedicate an exclusive space for bicycles. Design tools bolstering low-street use on these streets include traffic calming, enhanced crossings at larger streets, wayfinding and other signed or mapping amenities. Pavement markings, signs, and speed and volume management tools may be used to discourage cut-through trips by vehicles.

Conventional and Buffered Bike Lane: Exclusive spaces designated for bicyclists to operate one-way on the roadway using pavement marking and signs.

Protected Bike Lane and Separated Bikeway: A Protected Bike Lane is a one-way or two-way exclusive facility for bicyclists that is located within the roadway and has a physical and vertical separation from vehicular traffic, such as flex posts, bollards, and/or other barriers. A Separated Bikeway provides a one-way or two-way exclusive facility for bicyclists that is physically separated from motor traffic travel lanes, on-street parking on the driver's side, and sidewalks. They may be at street level or different elevations, and separated from vehicle travel lanes by on-street parking, bollards, landscaping, curbs, raised medians, or as a facility independent of motor vehicle travel lanes also referred to as "cycle tracks."

Shared-use Path: A facility separated and independent of the traveled way that is wide enough for both pedestrians and bicyclists to use at the same time. Typically, between 8 and 10 feet wide.

Multiuse Trail: A facility separated and independent of the traveled way that is wide enough for both pedestrians and bicyclists to use at the same time. Typically, 10 feet or wider. May be primarily part of the transportation network, a recreational trail, or both depending on the context.

Crossing Density: The frequency of marked and signalized pedestrian crossings for a roadway. Frequent and safe crossings encourage walking, bicycling, and transit use. Crossings are placed as needed to accommodate demand.

Transit Recommendations Levels:

High: Sign, Deployment Pad, Bench and Shelter (Coordination with PSTA)

Medium: Sign, Deployment Pad and Bench

Low: Sign, Deployment Pad/Sidewalk Adjacent to Roadway

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Desired Operating Speed: The ideal traffic speed for a corridor based on safety, design, signalizations, and amount of traffic. Vehicle speed is a crucial component in the severity of crashes as seen in the graphic to the right. Roadway design standards set the bases for speed limits, so the opportunity to reduce speeds through design, without significantly reducing travel time, is an important benefit of Complete Streets designs. A goal of Complete Streets is to not have a significant difference between target operating speeds, posted speed limits and design speed.

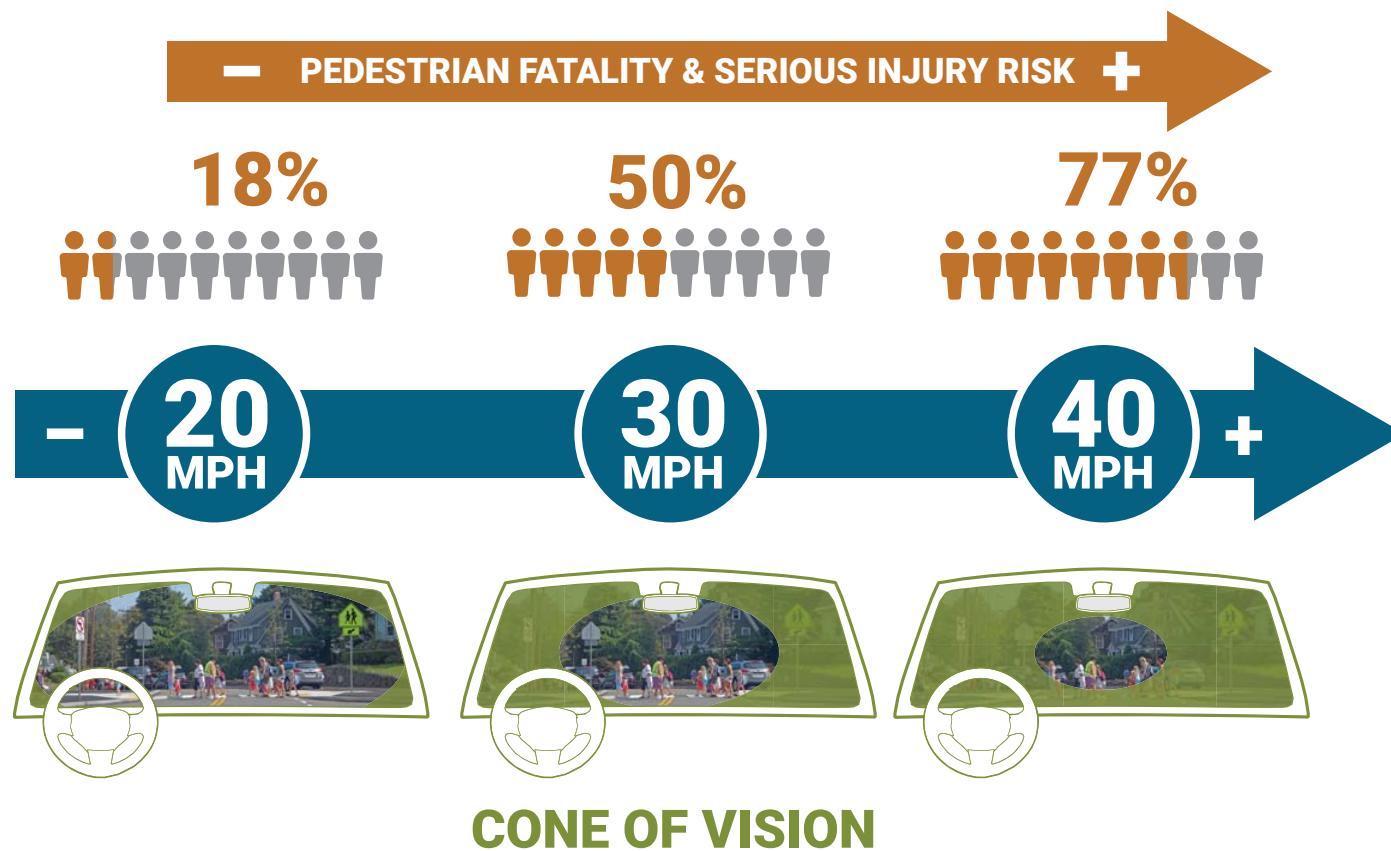


Image Source: US DOT/FHWA Achieving Multimodal Networks, 2016



FLEXIBLE STREET DESIGN

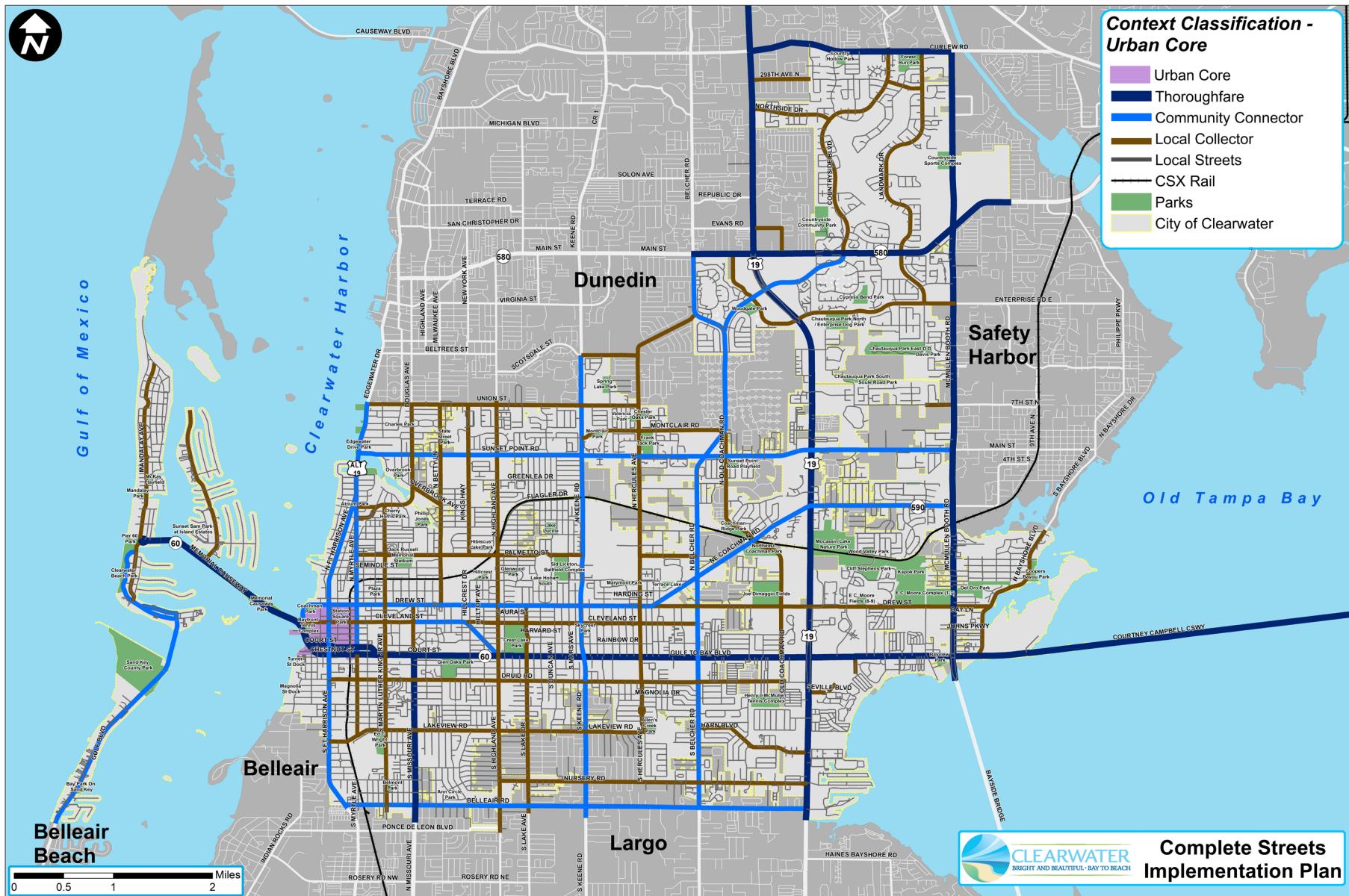
STREET TYPE

CONTEXT

INFRASTRUCTURE AND PLANS

STREET DESIGN

Context Classifications Map: Urban Core



| STREET TYPE | CONTEXT | INFRASTRUCTURE AND PLANS | STREET DESIGN |
|-------------|---------|--------------------------|---------------|
|-------------|---------|--------------------------|---------------|

| Urban Core | | Thoroughfare | Community Connector | Local Collector | Local Streets |
|------------------|---|---|----------------------------------|-----------------------|-----------------------|
| Pedestrian Realm | Frontage Zone | Refer to Downtown Redevelopment Plan and Beach by Design (intent is to create active pedestrian realm) | | | |
| | Pedestrian Zone | 12' (8') | 12' (8') | 12' (8') | 10' (8') |
| | Furnishing (landscaping, furnishing, utility) | Preferred | Preferred | Preferred | Preferred |
| Curb and Gutter | Curb Zone | 2' | 2' | 2' | 2' |
| | Bicycle Recommendations | Separated or on Parallel Streets | Separated or on Parallel Streets | Neighborhood Greenway | Neighborhood Greenway |
| | On-Street Parking | Analysis Recommended | Encouraged | Encouraged | Encouraged |
| Traveled Way | Transit Recommendations | High | High | Low | Low |
| | Desired Operating Speed | 25-30 mph | 20-30 mph | 20-25 mph | 15-25 mph |
| | Number of Lanes | 4-6 Lanes | 2-4 Lanes | 2-4 Lanes | 2 Lanes |
| | Lane Widths | 11' | 10'-11' | 10'-11' | 10' |
| | Crossing Density | 1/8 mile | 1/8 mile | 1/8 mile | Every Block |

FLEXIBLE STREET DESIGN

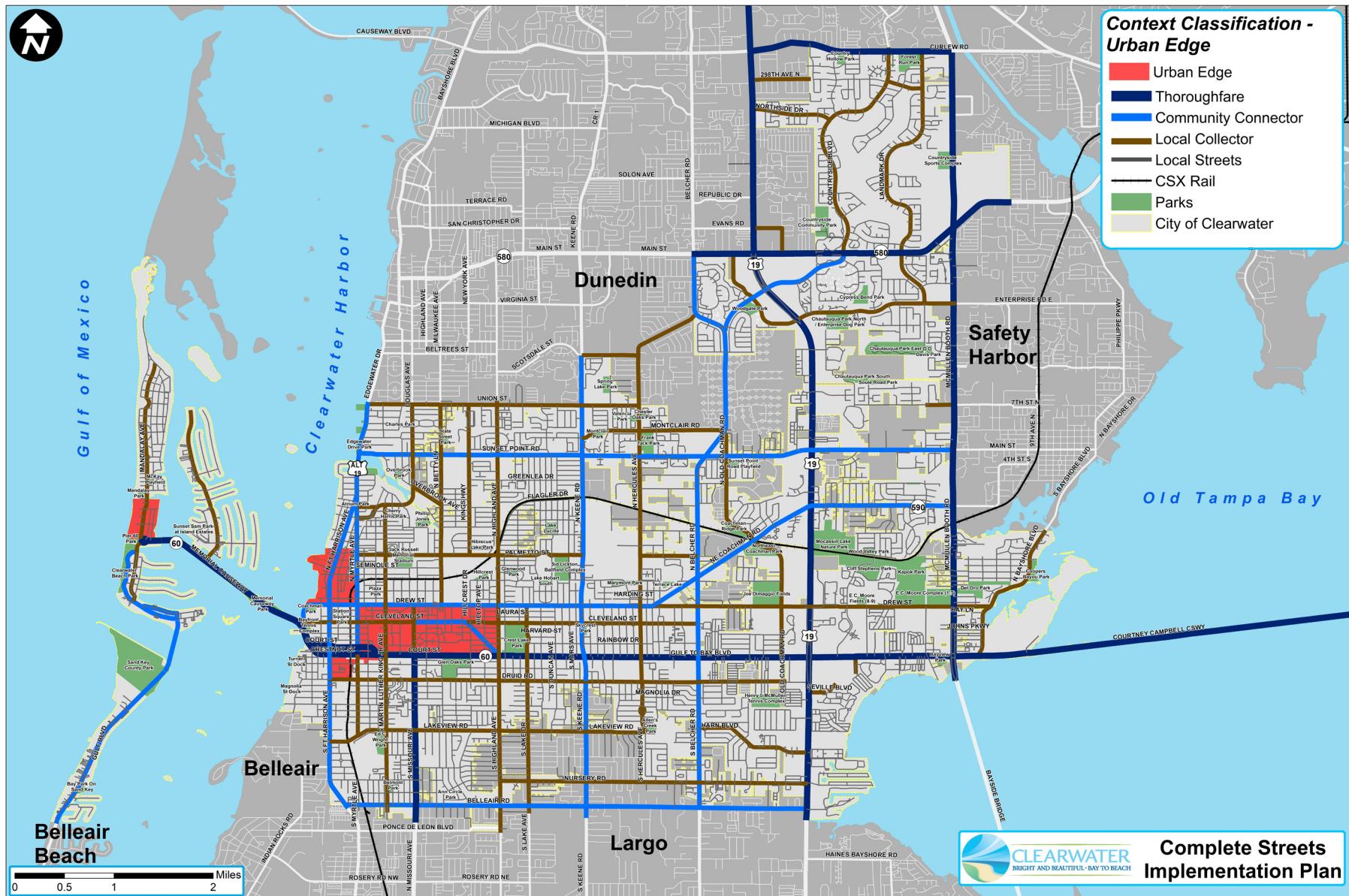
STREET TYPE

CONTEXT

INFRASTRUCTURE AND PLANS

STREET DESIGN

Context Classifications Map: Urban Edge



| STREET TYPE | CONTEXT | INFRASTRUCTURE AND PLANS | STREET DESIGN |
|-------------|---------|--------------------------|---------------|
|-------------|---------|--------------------------|---------------|

| Urban Edge | | Thoroughfare | Community Connector | Local Collector | Local Streets |
|------------------|---|---|---------------------------------|---------------------------------|-----------------------|
| Pedestrian Realm | Frontage Zone | Refer to Downtown Redevelopment Plan and Beach by Design (intent is to create active pedestrian realm) | | | |
| | Pedestrian Zone | 10' (8') | 10' (8') | 10' (8') | 10' (8') |
| | Furnishing (landscaping, furnishing, utility) | Preferred | Preferred | Preferred | Preferred |
| Curb and Gutter | Curb Zone | 2' | 2' | 2' | 2' |
| | Bicycle Recommendations | Separated or Parallel Facilities | Separated or Buffered Bike Lane | Separated or Buffered Bike Lane | Neighborhood Greenway |
| | On-Street Parking | Analysis Recommended | Encouraged | Encouraged | Encouraged |
| Traveled Way | Transit Recommendations | High | High | Low | Low |
| | Desired Operating Speed | 25-35 mph | 25-30 mph | 20-30 mph | 15-25 mph |
| | Number of Lanes | 4-6 Lanes | 2-4 Lanes | 2-4 Lanes | 2 Lanes |
| | Lane Widths | 11' | 10'-11'▲ | 10'-11' ▲ | 10' |
| | Crossing Density | 1/8 mile | 1/8 mile | 1/8 mile | 1/8 mile |

▲Depends on transit, freight plans and solid waste considerations

FLEXIBLE STREET DESIGN

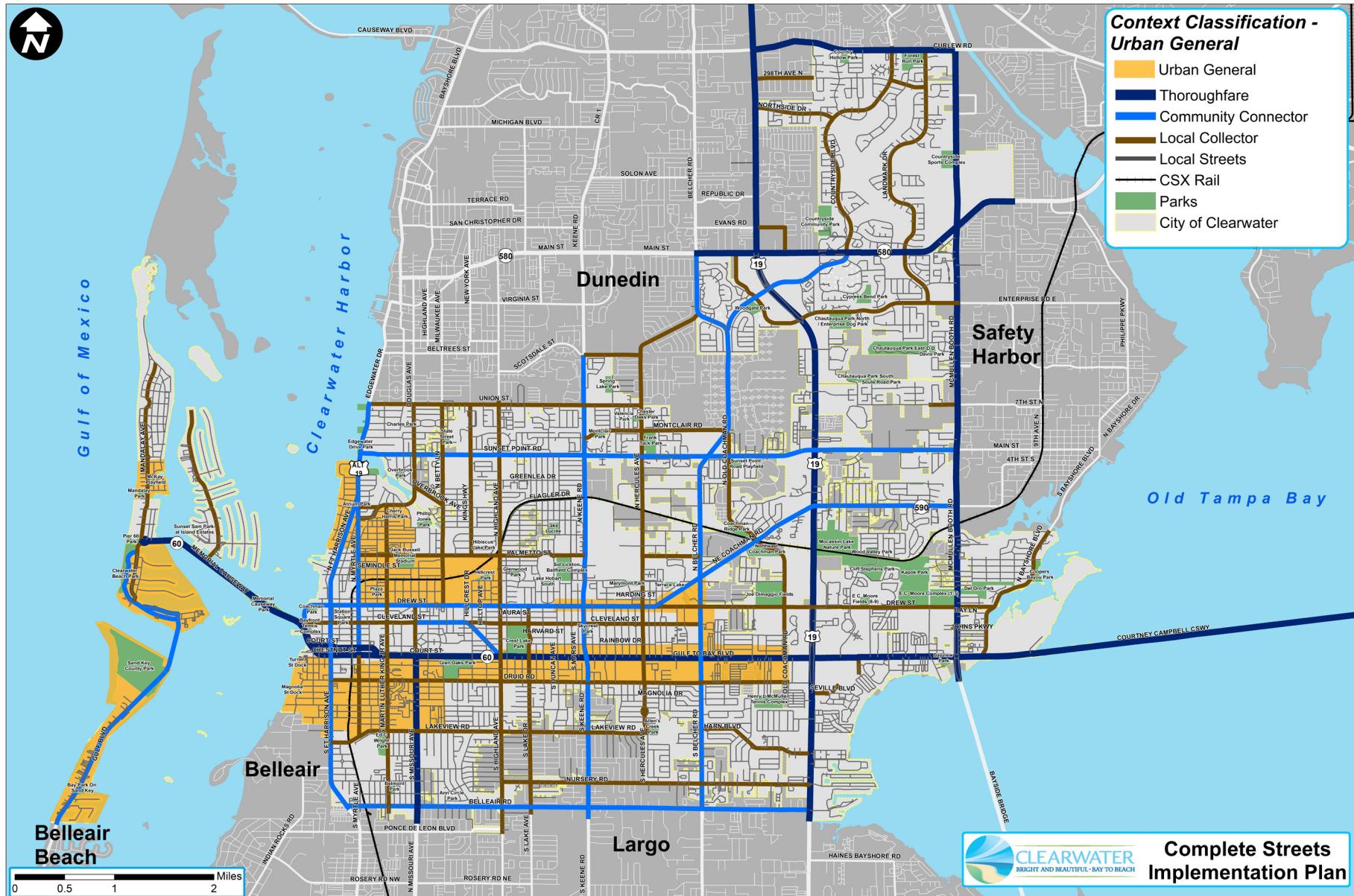
STREET TYPE

CONTEXT

INFRASTRUCTURE AND PLANS

STREET DESIGN

Context Classifications Map: Urban General



| STREET TYPE | CONTEXT | INFRASTRUCTURE AND PLANS | STREET DESIGN |
|-------------|---------|--------------------------|---------------|
|-------------|---------|--------------------------|---------------|

| Urban General | | Thoroughfare | Community Connector | Local Collector | Local Streets |
|------------------|---|---|---------------------------------|----------------------------------|-----------------------|
| Pedestrian Realm | Frontage Zone | See appropriate zoning code and Beach by Design | | | |
| | Pedestrian Zone | 8' (6') | 8' (6') | 8' (6') | 8' (6') |
| | Furnishing (landscaping, furnishing, utility) | Preferred | Preferred | Preferred | Preferred |
| Curb and Gutter | Curb Zone | 2' | 2' | 2' | 2' |
| | Bicycle Recommendations | Separated or Parallel Facilities | Separated or Buffered Bike Lane | Separated or Buffered Bike Lane* | Neighborhood Greenway |
| | On-Street Parking | Analysis Recommended | In denser areas | Encouraged | Encouraged |
| Traveled Way | Transit Recommendations | High | Medium | Low | Low |
| | Desired Operating Speed | 30-40 mph | 25-35 mph | 20-30 mph | 15-25 mph |
| | Number of Lanes | 6-8 Lanes | 2-4 Lanes | 2-4 Lanes | 2 Lanes |
| | Lane Widths | 11' | 10'-11'▲ | 11' ▲ | 10' |
| | Crossing Density | 1/2-1/4 mile | 1/8 mile | 1/4 mile | 1/4 mile |

*Or Neighborhood Greenway on low speed, low volume streets

▲Depends on transit, freight plans and solid waste considerations

FLEXIBLE STREET DESIGN

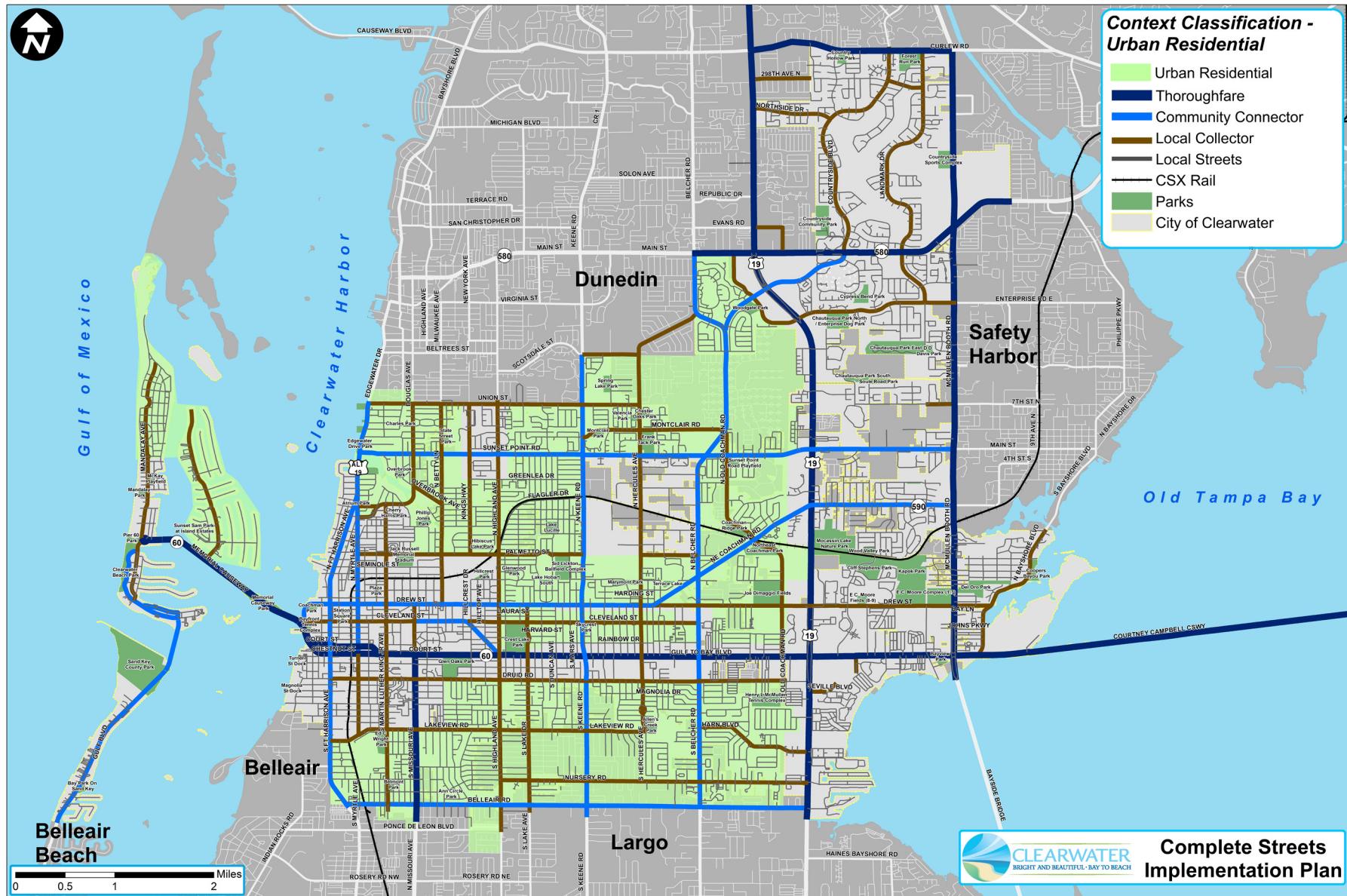
STREET TYPE

CONTEXT

INFRASTRUCTURE AND PLANS

STREET DESIGN

Context Classifications Map: Urban Residential



| STREET TYPE | CONTEXT | INFRASTRUCTURE AND PLANS | STREET DESIGN |
|-------------|---------|--------------------------|---------------|
|-------------|---------|--------------------------|---------------|

| Urban Residential | | Thoroughfare | Community Connector | Local Collector | Local Streets |
|-------------------|---|----------------------------------|---------------------------------|----------------------------------|-----------------------|
| Pedestrian Realm | Frontage Zone | See appropriate zoning code | | | |
| | Pedestrian Zone | 8' (6') | 8' (6') | 8' (6') | 8' (6') |
| | Furnishing (landscaping, furnishing, utility) | Preferred | Preferred | Preferred | Preferred |
| Curb and Gutter | Curb Zone | 2' | 2' | 2' | 2' |
| | Bicycle Recommendations | Separated or Parallel Facilities | Separated or Buffered Bike Lane | Separated or Buffered Bike Lane* | Neighborhood Greenway |
| | On-Street Parking | Analysis Recommended | Analysis Recommended | In denser areas | Encouraged |
| Traveled Way | Transit Recommendations | High | Medium | Low | Low |
| | Desired Operating Speed | 30-40 mph** | 25-35 mph | 20-30 mph | 15-25 mph |
| | Number of Lanes | 6-8 Lanes | 2-4 Lanes | 2-4 Lanes | 2 Lanes |
| | Lane Widths | 11' | 11' | 11' ▲ | 10'-11' |
| | Crossing Density | 1/2-1/4 mile | 1/4 mile | 1/4 mile | 1/4 mile |

*Or Neighborhood Greenway on low speed, low volume streets

**Does not include US 19

▲Depends on transit, freight plans and solid waste considerations

FLEXIBLE STREET DESIGN

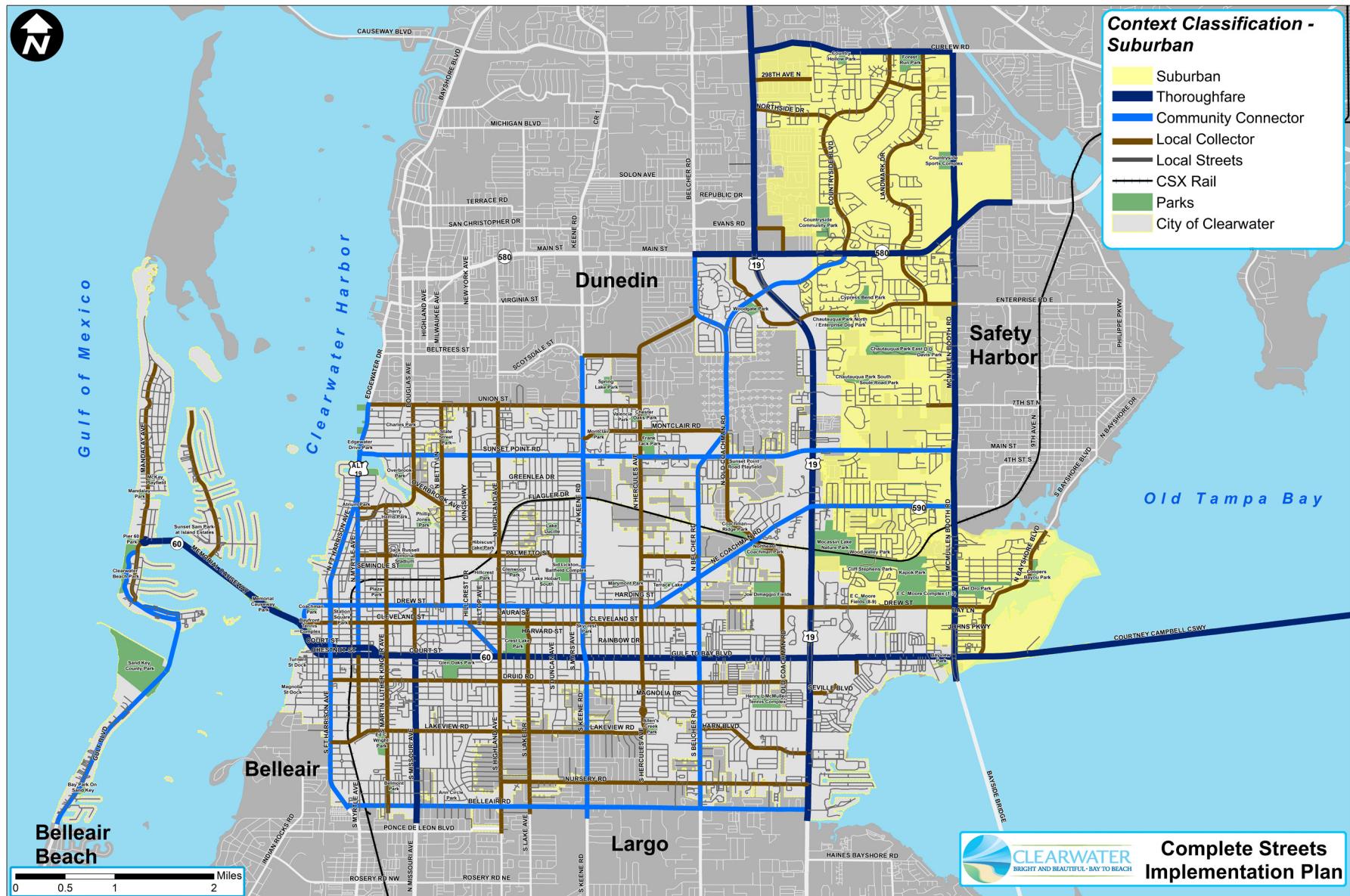
STREET TYPE

CONTEXT

INFRASTRUCTURE AND PLANS

STREET DESIGN

Context Classifications Map: Suburban



| | STREET TYPE | CONTEXT | INFRASTRUCTURE AND PLANS | | STREET DESIGN | |
|------------------|---|----------------------------------|---------------------------------|---------------------------------|-----------------------|---------------|
| Suburban | | | Thoroughfare | Community Connector | Local Collector | Local Streets |
| Pedestrian Realm | Frontage Zone | See appropriate zoning code | | | | |
| | Pedestrian Zone | 10' (8') | 8' (6') | 8' (6') | 8' (6') | |
| | Furnishing (landscaping, furnishing, utility) | Preferred | Preferred | Preferred | Preferred | |
| Curb and Gutter | Curb Zone | 2' | 2' | 2' | 2' | |
| | Bicycle Recommendations | Separated or Parallel Facilities | Separated or Buffered Bike Lane | Separated or Buffered Bike Lane | Neighborhood Greenway | |
| | On-Street Parking | Off-Street | Off-Street | Off-Street | Encouraged | |
| Traveled Way | Transit Recommendations | High | Medium | Low | Low | |
| | Desired Operating Speed | 35-45 mph** | 35-40 mph | 25-35 mph | 15-25 mph | |
| | Number of Lanes | 6-8 Lanes | 2-6 Lanes | 2-4 Lanes | 2 Lanes | |
| | Lane Widths | 11'-12'▲ | 11'-12'▲ | 11' | 10'-11' | |
| | Crossing Density | 1/2 mile | 1/2 mile | 1/4 mile | 1/4 mile | |

**Does not include US 19
▲Depends on transit, freight plans and solid waste considerations

FLEXIBLE STREET DESIGN

STREET TYPE

CONTEXT

INFRASTRUCTURE AND PLANS

STREET DESIGN

Flexible Street Design Toolkit

As mentioned previously, Complete Streets are typically comprised of three realms: pedestrian, curb and gutter, and the traveled way. The following pages provide a variety of specific tools that can enhance each of the street zones within these realms. These elements can be reviewed as part of a checklist when designing for Complete Streets. The accompanying photos within the toolkit are from other locations provided as constructed examples only, and all designs must conform to city, state, and federal standards.

Local example of Complete Streets elements: Palm Avenue, Tampa, FL

- Road Diet: 4-lane undivided to 2-lane divided
- Narrowed vehicle travel lanes
- Bike lanes
- Raised medians and high-visibility painted medians
 - protected left turn lanes
 - pedestrian refuges
- Intermittent landscaped medians slow traffic and improve aesthetics
- Mid-block crossings with flashing beacons (RRFBs)
- Intersection crossings enhanced with signage and pavement markings
- Sidewalks buffered from traveled way
- On-street parking and roundabouts between Tampa Street and North Boulevard

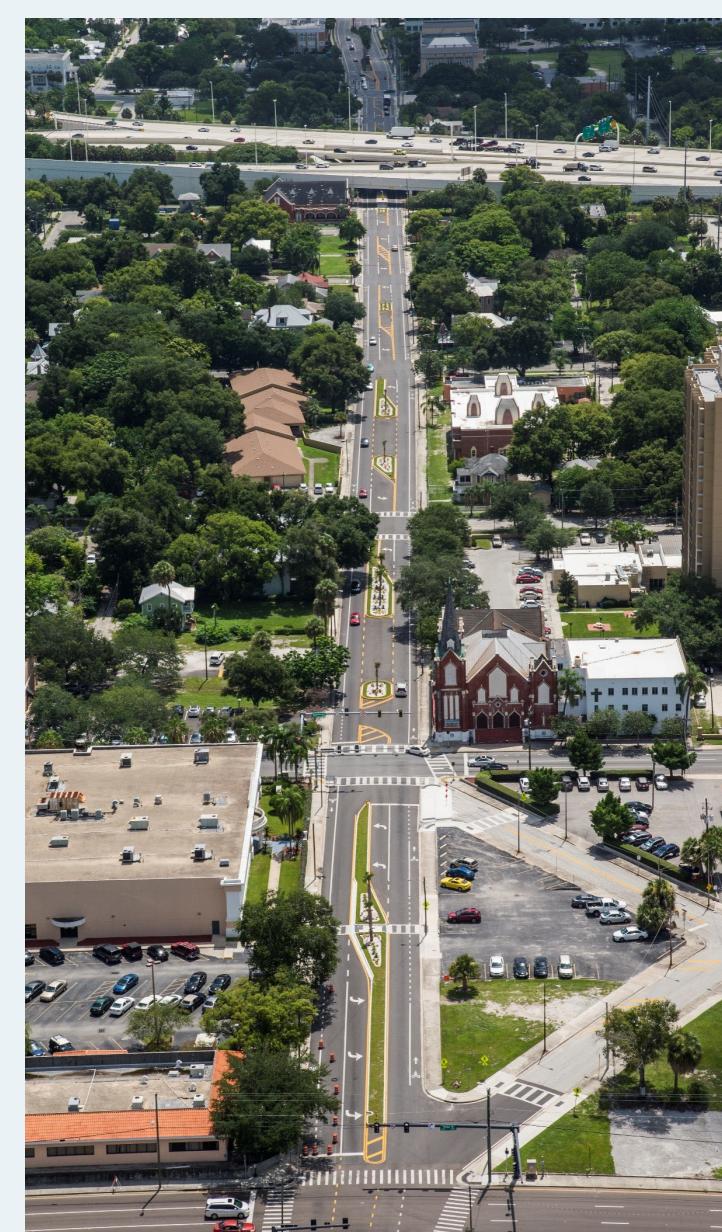


Image Source: City of Tampa

STREET TYPE

CONTEXT

INFRASTRUCTURE AND PLANS

STREET DESIGN

Pedestrian Design Strategies

Sidewalks: Urban and suburban **sidewalk** designs and standards vary due to differences in context, activity, and travel behavior. Wider sidewalks adjacent to public spaces support emergency access for first responders.

Traffic signals: Signalization design strategies improve efficiency and safety for all modes of transportation. Leading Pedestrian Intervals (LPI) should be implemented in high-traffic areas for pedestrians and vehicles such as downtown and commercial centers. Fixed **signals** in these areas also contribute to pedestrian travel efficiency and safety.

Intersections: Intersection crossings should include **striped crosswalks** to clearly define pedestrian space. Crossing distances should be minimized to limit the time pedestrians spend in the roadway and increase safety and comfort. Strategies to achieve this include straight crossings, curb extensions (bulb-outs), and pedestrian safety islands. **Curb extensions** visually and physically narrow the roadway which creates safer and shorter crossings, increases space available for **street furniture**, lighting, and **landscaping**, and provides protection for on-street parking. Similar applications of curb extensions are bus bulb-outs, pedestrian safety islands and mid-block crossings. **Pedestrian safety islands** allow a designated safe refuge space at the center of the roadway, which allows users to cross traffic one vehicle direction at a time and helps to slow vehicles by narrowing the street.

Sidewalks-Urban



Image Source: NACTO.org

Sidewalks-Suburban



Image Source: Zillow.com

Traffic Signals

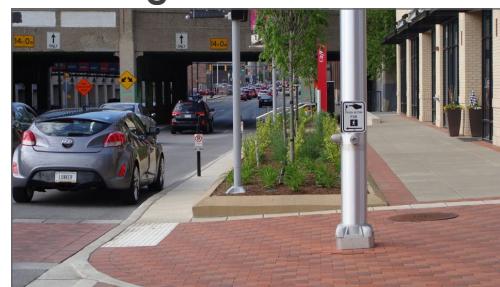


Image Source: NACTO.org

Striped Crosswalks

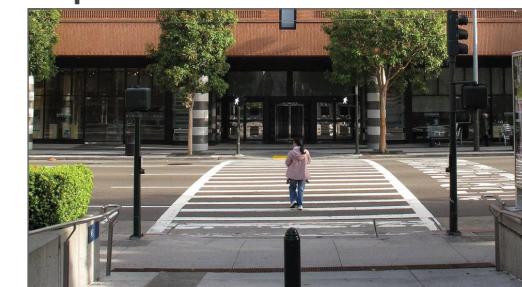


Image Source: NACTO.org

Curb Extension/Bulb-outs



Image Source: NACTO.org

Street Furniture



Image Source: NACTO.org

FLEXIBLE STREET DESIGN

STREET TYPE

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Pedestrian Safety Islands



Image Source: NACTO.org

Branding and Placemaking



Image Source: Kimley-Horn

Wayfinding



Image Source: City of Clearwater

Landscaping



Image Source: NACTO.org

Shade/Canopy Trees



Image Source: University of Florida IFAS

Shade Structures



Image Source: Kimley-Horn

Placemaking: Placemaking can create an interesting and easy to understand pedestrian network. **Branding** creates a distinct sense of place that is interesting and inviting for all road users to travel to and through.

Wayfinding allows for pedestrians, bicyclists, and motorists to easily navigate to activity centers and attractions. **Landscaping** creates a comfortable environment for pedestrians by providing shade and a buffer from adjacent street traffic. **Canopy trees** and **shade structures** create comfort in inhospitable environments, particularly for pedestrians and transit users. Trees also improve air quality, reduce heat island effect, and can reduce stormwater runoff. Pedestrian networks should have purpose and create connections to important and popular destinations. Well-connected networks and well-designed pedestrian realms increase economic activity and support growth of local businesses.

STREET TYPE

CONTEXT

INFRASTRUCTURE AND PLANS

STREET DESIGN

Curb and Gutter Zone Designs for Bicyclists and other Considerations

Bike Lanes and Cycle Tracks: Bike lanes designate an exclusive space for bicyclists through the pavement striping, signage, and pavement markings and physical barriers. These lanes enable bicyclists to travel at their own speed without interference from surrounding traffic. According to the NACTO Bicycle Design Guide, bike lanes also support more predictable behavior and movements between bicyclists and motorists, which increases the comfort level interacting for both riders and drivers. The configuration and intensity of bicycle infrastructure depends on road and land use contexts and the types of users for which the facility provides. Configuration of bike lanes also requires consideration of existing traffic levels and behaviors, appropriate safety buffers, and compliance with applicable traffic laws. **Conventional bike lanes** don't protect riders as much as separate or protected **cycle tracks**. **Buffered bike lanes** protect and separate bicyclists from adjacent vehicle travel lanes and/or parking lanes. Protected cycle tracks can include one-way, raised, or two-way lanes. Shared lanes, or sharrows, are travel lanes which bicycles and vehicles share. Sharrows are most appropriate for low volume, low speed streets.

Bicycle Facilities and Furniture: Accessible and functional bicycle parking is essential to supporting bicycling as a primary mode of transportation. **Bicycle parking** should be available in activity centers, commercial corridors and multi-family residential areas, as well as at major destinations and transit centers. Parking should be visible from the street or main building entry, separate from vehicle parking, drive aisle, or other travel ways, in an area that is lighted at least during surrounding business hours, and ideally semi- or fully-sheltered. Other **bicycle furniture** such as leaning rails, footrests, and the placement of actuation buttons easily reached at signals without dismounting or leaving a travel facility support and encourage bicycling.

Conventional Bike Lane



Image Source: NACTO.org

Buffered Bike Lane



Image Source: NACTO.org

Neighborhood Greenway



Image Source: portlandoregon.gov

Cycle Track



Image Source: NACTO.org

Bike Box



Image Source: NACTO.org

Safe Intersection Crossing



Image Source: CDOT

FLEXIBLE STREET DESIGN

STREET TYPE

CONTEXT

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STREET DESIGN

Safe Bicycle Crossings



Image Source: City of Tucson

Curb Bioswale



Image Source: NACTO.org

Green Infrastructure: Incorporating green infrastructure as a stormwater management tool can mitigate temporary flooding along pedestrian and bicycle routes while creating a more beautiful and resilient environment. These can be implemented in the form of **bioswales** or rain gardens within the curb area and curb extensions.

On-Street Parking: **On-street parking** acts as a physical barrier that protects pedestrians and outdoor cafés from potential traffic crashes, and can be designed to provide a protected bicycle facility. This should only be used in urban and commercial areas that are major activity attractors. (On-street parking in matrices is encouraged in other locations). On-street parking also slows vehicles and supports economic activity for adjacent commercial and retail centers.

Bicycle Street Furniture



Image Source: DEZIGNLINE

Protected: On-Street Parking



Image Source: NACTO.org

Bicycle Parking



Image Source: NACTO.org

Shared Use Path



Image Source: Pinellas County

| STREET TYPE | CONTEXT | INFRASTRUCTURE AND PLANS | STREET DESIGN |
|-------------|---------|--------------------------|---------------|
|-------------|---------|--------------------------|---------------|

Traveled Way Design Strategies

Transit Stops and Intersections: **Transit stops** should be located at appropriate connections that promote a well-connected pedestrian, bicycle, and transit network.

Dedicated bus lanes where feasible, or bus pull out areas with priority signalization, should be implemented on major transit streets to ensure transit reliability and consistency while providing superior transit service. Transit stops should include amenities to provide a comfortable and safe environment for users. The types and number of amenities varies with the context, but can include an **overhead structure/shelter**, benches, lighting, trash cans, transit system/route map, wayfinding/signage, and bicycle racks. Intersection crossings should be placed within appropriate distances to accommodate pedestrian safety and located to also support connections to transit stops.

Travel Lanes: Lane widths should be considered in all street designs as a method to serve all users' needs and modes, including travel lanes, safety islands, bike lanes, and sidewalks. The lane width should reflect the goals for traffic calming and adequate space for larger vehicles like freight and buses. Left turns in high traffic volume areas create safety issues, congestion and long queues, and should be avoided except for in low traffic corridors.

Traffic Signals: Coordinated signal timing helps move vehicles efficiently and safely. Transit Signal Priority (TSP) accommodates bus transit to ensure on-time and efficient transportation schedules. **Bicycle signals** should be installed along major bicycle routes and considered for high-traffic volume intersections to ensure safety. More discussion on signal timing is provided in the Intersection Design Strategies.

Transit Stop: Placement and Spacing



Image Source: NACTO.org

Dedicated Bus Lanes



Image Source: NACTO.org

Pedestrian Median



Image Source: NACTO.org

Transit Stop: Information and Wayfinding



Image Source: NACTO.org

Enhanced Transit Shelter



Image Source: PSTA

Bicycle Signals



Image Source: NACTO.org

FLEXIBLE STREET DESIGN

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CONTEXT

INFRASTRUCTURE AND PLANS

STREET DESIGN

Road Diets and Lane Diets



Image Source: NACTO.org

Speed Table



Image Source: NACTO.org

Chicanes



Image Source: NACTO.org

Speed Cushions



Image Source: NACTO.org

Landscaped Median



Image Source: US DOT

Pinchpoint



Image Source: NACTO.org

Roadway: Roads are typically designed based on the expected highway capacity, or the ability for a certain number of motorized vehicles to traverse a certain point or segment in a given period based on existing and projected use from future growth. At times, this results in roads designed to serve many more vehicles than the actual need in the foreseeable future and opportunities to improve the facilities provided for other modes, or to re-balance the modal priorities of the corridor. Narrowing lanes, also known as a lane diet, or reducing the number of lanes, also known as a **road diet**, may allow for additional right-of-way to be re-purposed used towards other street elements like bicycle lanes, landscaped medians with mid-block crosswalks, and dedicated vehicle turn lanes, or wider sidewalks. Streets with low traffic volumes and speeds can be designed to give bicycle modal priority through the use of signs and pavement markings to increase bicycle travel by providing safer and convenient facilities. Medians provide access control along a corridor which improves safety from turning vehicles. Landscaping within medians provides beautification to a corridor, mitigates roads' heat generation, and naturally reduces traffic speeds. Medians also provide refuge for pedestrians and bicyclists while crossing streets.

Speed reduction: Speed control elements manage traffic speeds and reinforce safe, pedestrian-friendly speeds. These elements are most commonly found in neighborhood or residential areas and low-speed streets without freight traffic. Some of these elements include: curb extensions, **chicanes**, **pinchpoints**, speed bumps, **speed tables**, **speed cushions**, and landscaping.

Intersection Design Strategies

Well-designed intersections take into account all modes of transportation: pedestrians, bicyclists, transit and vehicles. Intersection design should promote visibility and predictability for all users to create a safe, accessible and intuitive environment. The following tools should be used to create efficient and safe shared spaces for all travel modes.

Intersection Redesign: **Raised intersections** and **neighborhood traffic circles** force drivers to lower vehicle speeds and yield to pedestrians crossing the intersection. Neighborhood traffic circles calm traffic and often incorporate vegetation, enhancing neighborhood aesthetics. **Painted intersections** clearly define the intersection and slow vehicle speeds. The **radius of a turning corner** impacts the speed at which a vehicle turns. Minimizing the turn radius creates slower and safer speeds for pedestrians and motorists for areas with lower freight traffic. **Gateways** are similar to curb extensions and often implemented at the mouth of an intersection. Gateways act as an entrance to residential or low speed streets to mark the transition to a slower speed or pedestrian-oriented street. **Tactical public spaces** can be created at intersections with excessive, unused roadway space to create active, pedestrian spaces. Over time, the interim spaces can be turned into permanent spaces. Intersection design should facilitate eye contact between all street users to ensure they all interpret the intersection as a shared space. This is done through increased **visibility** by removing trees, utility boxes, and other objects that disrupt sight lines at intersections.

Raised Intersections



Image Source: NACTO.org

Neighborhood Traffic Circles



Image Source: NACTO.org

Intersection Visibility



Image Source: NACTO.org

Painted Intersection



Image Source: St. Petersburg Arts Alliance

Gateway



Image Source: NACTO.org

Tactical Public Spaces

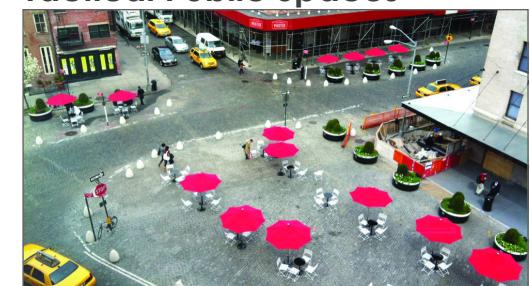


Image Source: NACTO.org

FLEXIBLE STREET DESIGN

STREET TYPE

CONTEXT

INFRASTRUCTURE AND PLANS

STREET DESIGN

Pavement Treatment

Crosswalk



Image Source: NACTO.org

Standard Crosswalk Striping



Image Source: NACTO.org

Curb Ramps



Image Source: NACTO.org

Curb Radii

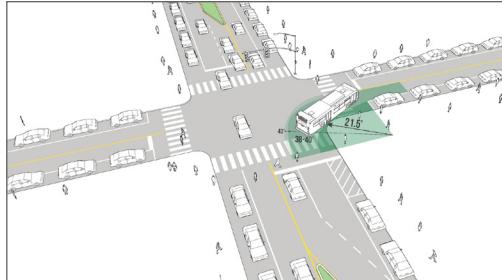


Image Source: NACTO.org

RRFBs



Image Source: NACTO.org

Lighting



Image Source: City of West Kelowna

Traffic Signals Timing: Shortened signal cycles increase turnover by creating lower wait times in all directions and allowing more frequent crossing opportunities. Signal timing should be managed based on peak and off-peak traffic volumes. Signal timing should be adjusted to accommodate varying traffic levels throughout the day.

Crossings: Crosswalks should be marked with **conventional striping** wider than the sidewalks it connects. **Pavement treatment crosswalks** can be used to emphasize a crosswalk and enhance community character and identity. **Curb Ramps** must be provided and accessible at all crosswalks and are required to meet ADA standards. Street furniture should not obstruct the top of the curb ramp to ensure accessibility. **Rectangular Rapid Flashing Beacons** (RRFBs) should be placed at mid-block crossings to further alert motorists of pedestrian crossings. All crossings should have adequate **lighting** of pedestrians to create a safe environment for all modes of transportation. The presence of lighting can significantly reduce pedestrian and bicycle fatalities and incapacitating injuries.

Complete Streets Case Studies

The following case studies illustrate the benefits of Complete Streets designs including positive impact on local economies, safety, communities, environment, and social equity. Specific tools from the Flexible Street Design Toolkit were used in these Complete Streets projects and can be used in City of Clearwater projects. Some of these examples required lane elimination; however, many Complete Streets treatments are less intrusive than lane eliminations.

Lancaster Boulevard | Lancaster, CA



Downtown roadway redesign

Source: City of Lancaster, CA



Design Elements:

- Traffic signal elimination
- Speed limit reduction
- Angled parking
- Landscaping
- Street furniture
- Lighting
- Lane elimination
- Ramblas/pedestrian median

Results:

- Double pedestrian activity
- Vehicle crashes down 38%
- Injury crashes down 49%
- Pedestrian crashes down 78%
- 57 new businesses since the redesign
- Construction and redevelopment of commercial spaces along corridor
- 96% commercial occupancy
- Creation of 2,000+ jobs
- Estimated \$282 million of economic impact
- New housing development (includes affordable housing)

Retail sales increased 57%

FLEXIBLE STREET DESIGN

STREET TYPE

CONTEXT

INFRASTRUCTURE AND PLANS

STREET DESIGN

Complete Streets Case Studies

La Jolla Boulevard | San Diego, CA



Commercial roadway redesign

Source: Dan Burden

Motorists understandably dreaded this change before it was made. But, most interestingly, motorists started driving 19 mph on 2.5 miles of La Jolla Boulevard, instead of 40-45, then stopping and stopping again. Today, motorists are getting to their destinations in less time, because they aren't stopping.

- Dan Burden, Transportation Consultant

Greenville Avenue | Dallas, TX



Downtown roadway redesign

Source: City-Data.com, City of Dallas, TX

Design Elements:

- Lane Elimination
- Bulb-outs (crossing movements reduced from 68ft to 14ft)
- Pedestrian refuge islands
- Roundabout
- Bike Lanes
- Bus pads and benches
- Angled and parallel parking

Results:

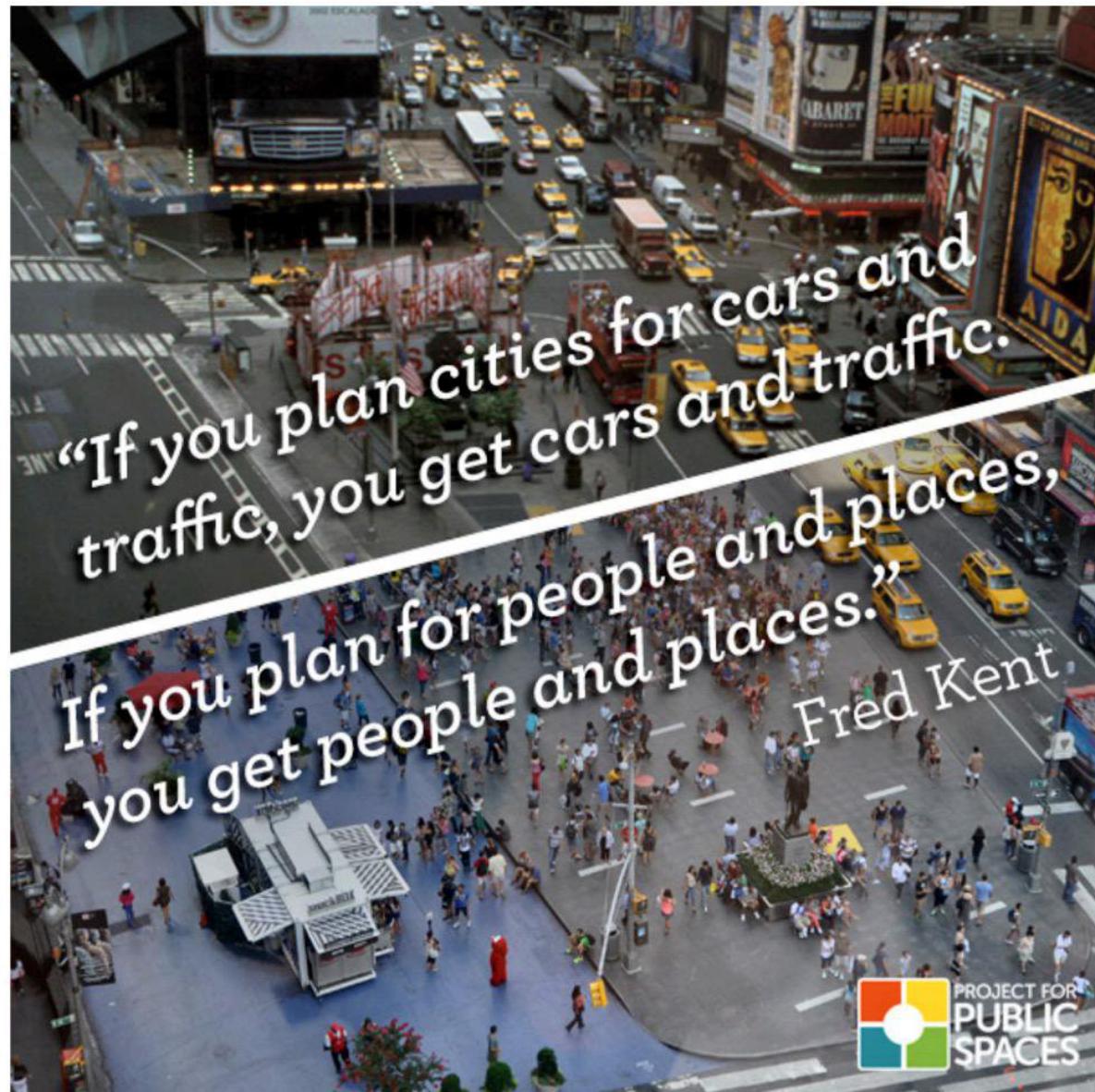
- Operating speed dropped from 40-45 mph to 20 mph
- Traffic count remained the same (23,000 vehicles/day before, 22,000 after)
- Retained transit stops
- Retail sales rose 35%
- Noise levels dropped by 77%
- Traffic crashes fell by 90%

Design Elements:

- Roundabouts
- Mid-block crossings
- Bulb-outs
- On-street parking
- Landscaping
- Brick pavers
- Safety buffer
- Pedestrian-scale lighting
- Bicycle racks

Results:

- 60% reduction in injury crashes
- 90% reduction in serious injury crashes
- Decline in mid-block and intersection crashes
- Slower vehicle speeds
- Revitalization of downtown



Section 3

ACTIONS FOR IMPLEMENTATION

- Policy and Regulatory Improvements
- Project Delivery and Process Improvements
- Capital Improvement Projects
- Measuring and Evaluating Performance



3. ACTIONS FOR IMPLEMENTATION

The actions outlined in this section provide a framework to ensure that Complete Streets principles are a foundational part of infrastructure projects in the City moving forward. The Guiding Principles in [Section 1](#) and the Flexible Street Design process in [Section 2](#) are intended to be included as part of the review process when projects impact streets in Clearwater. Implementation of these actions, as well as utilizing the tools presented in [Section 2](#) should start now. Projects already in design should be reviewed to incorporate elements where feasible. Successful attainment of the Guiding Principles needs to be measured not only on a Citywide level, but on a project by project basis in order to make adjustments when needed and to apply lessons learned to future projects. The Complete Streets Implementation Plan should be revisited continuously and updated within the next five years. Key actions for each of the following four topic areas are listed below, as part of the expanded Actions for Implementation list on the following page.

Policy and Regulatory Improvements

- Adopt a Complete Streets Policy
- Develop a Complete Streets Checklist
- Update Community Development Code and Comprehensive Plan

Project Delivery and Process Improvements

- Create interdepartmental review process
- Develop annual and 5-year project priority lists, with timeframes and budgets
- Training, education, and promotion of Complete Streets

Capital Improvement Projects

- Develop a Citywide street characterization map and table based on contexts and modes
- Promote seamless connectivity for all modes of transportation

Measuring and Evaluating Performance

- Use Guiding Principles to evaluate effectiveness of Complete Streets
- Evaluate measures to adjust future project selection, scoping, design, construction, and maintenance

ACTIONS FOR IMPLEMENTATION

| Topic | Action | Lead Departments | Support Departments |
|---|---|-------------------------------------|----------------------------|
| SHORT TERM IMPLEMENTATION PLAN (up to 2 years) (*=additional information on following pages) | | | |
| 1. Policy & Regulatory | Adopt Complete Streets Policy* | Planning & Development | Multiple Departments |
| 2. Policy & Regulatory | Develop a Complete Streets Checklist* | Planning & Development | Multiple Departments |
| 3. Policy & Regulatory | Update Community Development Code and Comprehensive Plan* | Planning & Development | Engineering |
| 4. Policy & Regulatory | Update Engineering Standards to allow for Implementation Plan design standards* | Engineering | Planning & Development |
| 5. Policy & Regulatory | Adopt policies, if needed, to preserve rail and utility corridors for multi-use trails | Engineering | Planning & Development |
| 6. Policy & Regulatory | Update the Bicycle & Pedestrian Master Plan | Planning & Development | Multiple Departments |
| 7. Project Delivery and Process | Create an interdepartmental project review process that includes Complete Streets design assessments* | Engineering | Multiple Departments |
| 8. Project Delivery and Process | Develop an annual and 5-year project priority list with ranking criteria and proposed costs for all infrastructure and maintenance projects. Create master list. Map projects* | Multiple Departments | Planning & Development |
| 9. Project Delivery and Process | Identify all 3R projects scheduled for next year, and 5 years, and analyze for Complete Street opportunities. | Engineering | Multiple Departments |
| 10. Project Delivery and Process | Establish a formal Complete Streets Advisory Board/Committee* | Planning & Development | Multiple Departments |
| 11. Project Delivery and Process | Provide training and educational opportunities for staff from interdepartmental review team on national Complete Streets best practices and innovations* | Planning & Development; Engineering | Multiple Departments |
| 12. Project Delivery and Process | Develop and apply Road Safety Assessment tools for all modes for project identification or review (e.g. FHWA STEP program) | Planning & Development; Engineering | Police; Parks & Recreation |
| 13. Project Delivery and Process | Work toward City certifications for healthy communities and develop targeted active transportation programs (e.g. Bike Friendly Communities, Walk Friendly Communities, Active Routes to Parks, Schools, for Seniors) | Planning & Development; Engineering | Multiple Departments |

| Topic | Action | Lead Departments | Support Departments |
|---|--|-------------------------------------|-----------------------------------|
| 14. Capital Improvement Projects | Enact temporary pop-up or demonstrations that assess/lead to Quick Build projects* | Planning & Development; Engineering | Multiple Departments |
| 15. Capital Improvement Projects | Pursue dedicated and additional funding for Complete Streets* | Planning & Development | Engineering; Multiple Departments |
| 16. Performance Measures | Create a tool to establish baselines and determine post-project findings for each measure | Planning & Development; Engineering | Multiple Departments |
| MEDIUM TERM IMPLEMENTATION (3-5 years) (*=additional information on following pages) | | | |
| 17. Policy & Regulatory | Evaluate Subdivision regulations to encourage connectivity in residential areas | Planning & Development | Engineering |
| 18. Policy & Regulatory | Integrate existing trails into and plan future trails as part of the City's transportation network | Parks & Recreation; Engineering | Planning & Development |
| 19. Capital Improvement Projects | Categorize all City streets based on Implementation Plan contexts analysis for future Complete Streets opportunities | Planning & Development; Engineering | Multiple Departments |
| 20. Performance Measures | Update Performance Measures and tools based on usage and outcomes | Planning & Development | Engineering |
| LONG TERM IMPLEMENTATION (6-10 years) (*=additional information on following pages) | | | |
| 21. Project Delivery and Process | Major capital improvement projects as identified by the recommended review process | Multiple Departments | Multiple Departments |
| ON-GOING IMPLEMENTATION (*=additional information on following pages) | | | |
| 22. Project Delivery and Process | Utilize or develop project prioritization criteria for funding and development of priority projects | Engineering | Multiple Departments |
| 23. Project Delivery and Process | Continue to coordinate with other agencies to ensure project consistency and adherence to Complete Streets standards | Planning & Development; Engineering | Multiple Departments |
| 24. Project Delivery and Process | Continue to work with neighborhoods, businesses, organizations, and social support agencies to meet transportation needs | Planning & Development | Multiple Departments |
| 25. Capital Improvement Projects | Conduct special area mobility studies | Planning & Development; Engineering | Multiple Departments |

ACTIONS FOR IMPLEMENTATION

POLICY AND REGULATORY IMPROVEMENTS

PROJECT DELIVERY AND PROCESS IMPROVEMENTS

CAPITAL IMPROVEMENT PROJECTS

MEASURING AND EVALUATING PERFORMANCE

Policy and Regulatory Improvements

Adopting a Complete Streets policy and regulations is an important step for the City to modernize and coordinate the way it undertakes the transportation planning, design, and maintenance processes. A policy also provides a foundation for the City to adapt to the changing needs of the community and better prepare the City for the future. Complete Streets designs will be more easily implemented as local regulations are updated to reflect the best practices identified in **Section 2**, which have been tailored to the City of Clearwater from nationally-recognized best practices and future updates to these guides.

Key Actions

ACTION 1: Adopt a Complete Streets Policy*

Develop a policy to integrate Complete Streets into the decision-making process of the City. The policy should address all modes of transportation for people of all ages and abilities whether they drive personal vehicles or freight, walk, bicycle, or ride transit. The policy could also include technological advancements in transportation.

ACTION 2: Develop a Complete Streets Checklist*

Develop a Complete Streets checklist to use during the project development phase. The checklist should ensure that all projects within the public right-of-way comply with the intent of the Complete Streets policy and Plan. The checklist is required to be completed for all roadway projects and for major site plans, and will be reviewed by the person responsible for identifying plans for multimodal opportunities and compliance with the Plan. The checklist is an important tool to ensure that the guidelines are consistently applied as part of the project approval process.

ACTION 3: Update Community Development Code and Comprehensive Plan*

Conduct a thorough review of the City's policies, street design standards, development ordinances, and other regulatory guidelines for compliance with the Plan. Amend the Comprehensive Plan and Community Development Code to support the Plan.

Work with the Engineering Department to adopt context classifications, street type maps, and the context design matrix as appropriate into the Comprehensive Plan and Community Development Code

- Revise the Future Land Use Element and Transportation Element of the Comprehensive Plan to reinforce policies linking land use and transportation.
- Update bicycle, pedestrian, and landscaping standards in the Community Development Code to incorporate the context design matrix.
- Update traffic and crash data.
- Adopt Level of Traffic Stress standards for bicyclists and for pedestrians in the Comprehensive Plan.
- Evaluate subdivision standards to encourage connectivity in residential areas.
- Incorporate required bicycle parking regulations into development standards Citywide.

Encourage transit-oriented development, ridership, and funding

- Consider zoning incentives for developments particularly along premium transit corridors being studied by Forward Pinellas and Pinellas Suncoast Transit Authority (PSTA).
- Encourage Complete Streets projects, increased densities, and updated parking regulations on important corridors and at key transit stops.

Provide policies promoting sustainability and healthy communities

- Emphasize a reduction in vehicle miles of travel (VMT) as a component of the development review process.
- Consider adopting a Health in All Policies ordinance that reviews impacts on community health outcomes as part of the transportation project review process.

Incorporate technological advancements in transportation

- Create policies that address the rapid increase in transportation-related technology such as drop-off locations for ride-hailing services, freight loading/unloading, low speed electric vehicles, autonomous vehicles, micromobility such as motorized scooters, bike share, parking improvements, wayfinding, and new transportation information options.

Improve multimodal options

- Enhance the traffic calming program to include a variety of solutions.
- Provide separated bicycle facilities or facilities on parallel streets for thoroughfares or high-speed streets.

ACTION 4: Update Engineering Standards to allow for Implementation Plan design standards*

Review and update engineering standards to incorporate the street design process guidance (identified in [Section 2](#)), particularly context classification and street types, into design standards.

ACTIONS FOR IMPLEMENTATION

POLICY AND REGULATORY IMPROVEMENTS

PROJECT DELIVERY AND PROCESS IMPROVEMENTS

CAPITAL IMPROVEMENT PROJECTS

MEASURING AND EVALUATING PERFORMANCE

Project Delivery and Process Improvements

Projects and requests that impact streets typically come from several City departments. These include scheduled projects, requests from the City Council, the public, or private development, responses to unforeseen events, and other studies and/or agencies (FDOT, Forward Pinellas, PSTA, surrounding cities). City departments that coordinate on street changes include:

- Engineering (includes stormwater, utilities, traffic operations, landscape architecture, parking, etc.)
- Parks and Recreation
- Community Redevelopment Agency (CRA)
- Economic Development
- Planning and Development
- Solid Waste/Recycling
- Emergency Management
- Fire and Rescue
- Police

The map on the following page shows major City streets (highlighted in orange) where improvements in the future will be coordinated with some if not all the departments noted above. State and county roadways are also identified.

Infrastructure projects on these streets should be coordinated by the Planning and Development and Engineering Departments with the responsible agency and staff.



Key Actions

ACTION 7: Create an interdepartmental review process that includes Complete Streets design assessments and hold regular scheduled meetings*

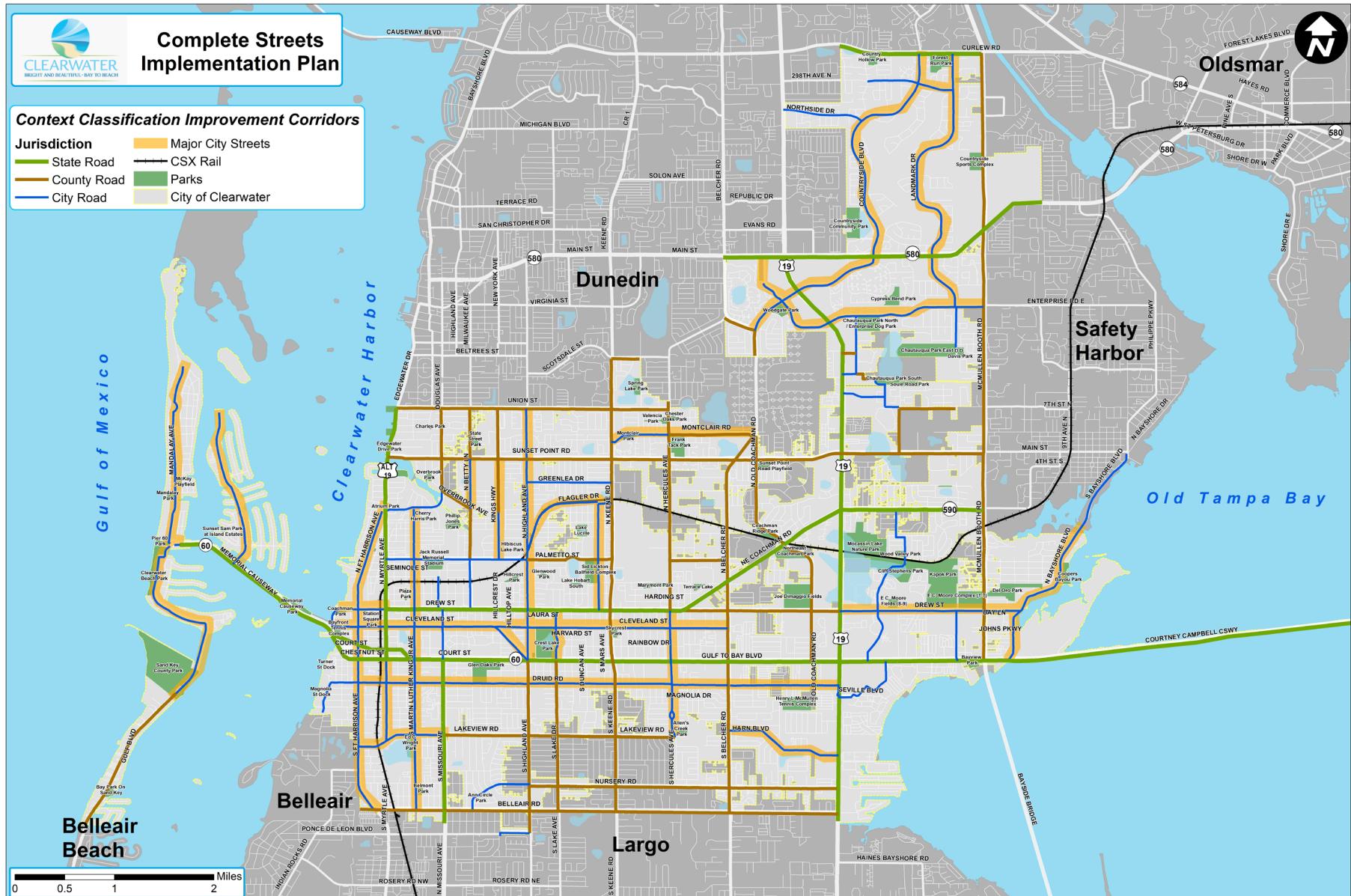
Include Planning and Development Department staff at scoping meetings, in the project review process, and early in design stage for opportunities of Complete Streets recommendations. The Project Delivery Process flowchart on the following pages shows the updated review process to include Complete Streets elements. Additional information is included in the [Appendix](#) on interviews with different City departments.

POLICY AND REGULATORY IMPROVEMENTS

PROJECT DELIVERY AND PROCESS IMPROVEMENTS

CAPITAL IMPROVEMENT PROJECTS

MEASURING AND EVALUATING PERFORMANCE



ACTIONS FOR IMPLEMENTATION

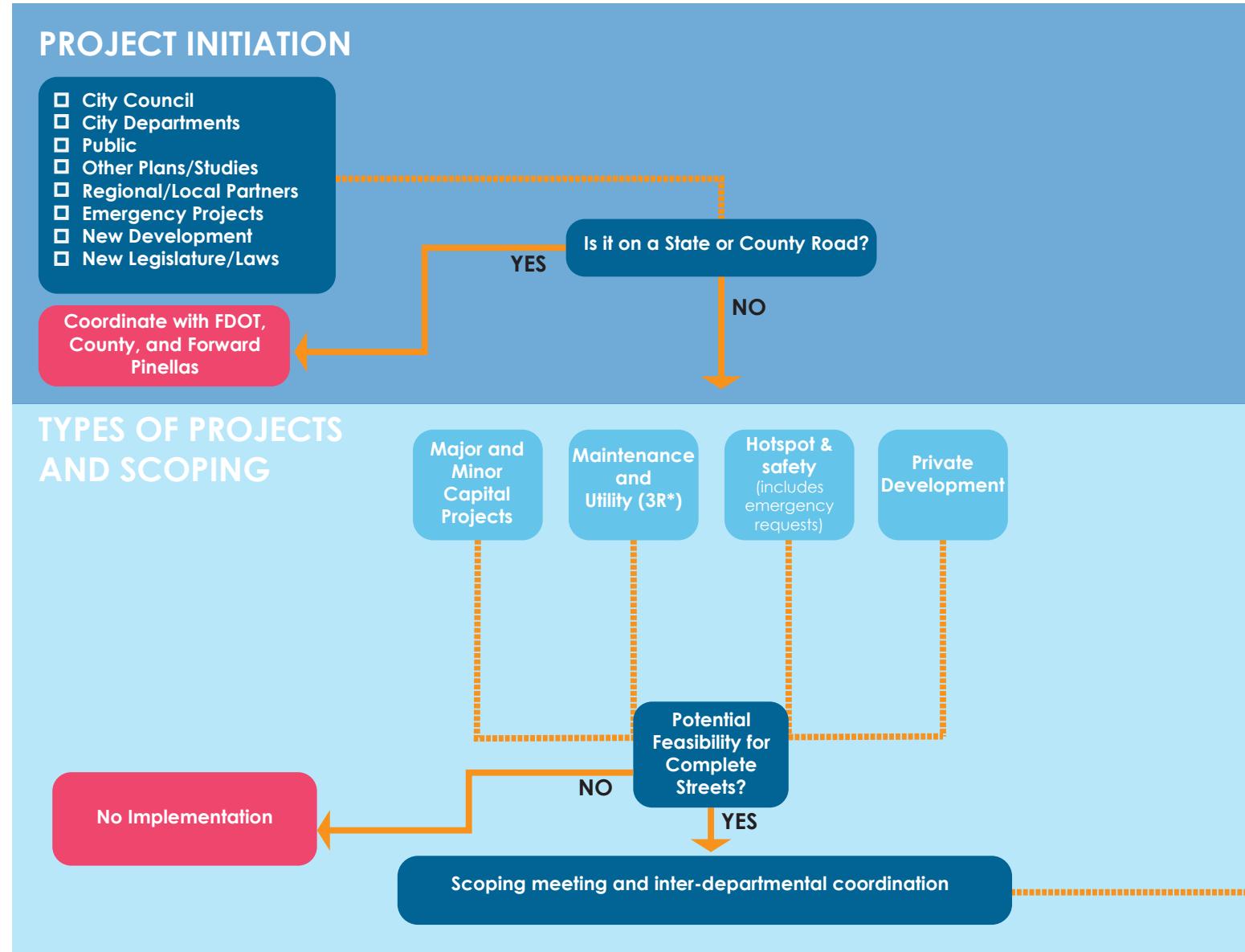
POLICY AND REGULATORY IMPROVEMENTS

PROJECT DELIVERY AND PROCESS IMPROVEMENTS

CAPITAL IMPROVEMENT PROJECTS

MEASURING AND EVALUATING PERFORMANCE

Project Delivery Process

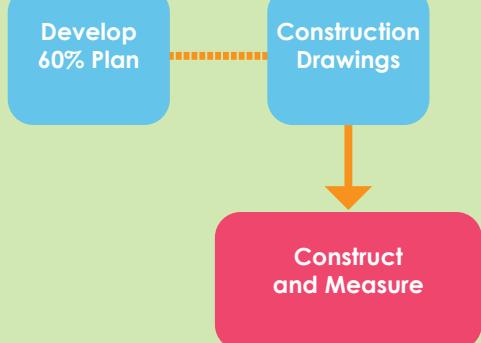


*Resurfacing, Restoration, and Rehabilitation

FEASIBILITY & CONCEPTUAL STREET DESIGN



DESIGN & IMPLEMENTATION



**For Capital Improvement Projects

ACTIONS FOR IMPLEMENTATION

POLICY AND REGULATORY
IMPROVEMENTS

PROJECT DELIVERY AND
PROCESS IMPROVEMENTS

CAPITAL IMPROVEMENT
PROJECTS

MEASURING AND
EVALUATING PERFORMANCE

Key Actions

ACTION 8: Develop an annual and 5-year project priority list with ranking criteria and proposed costs for all infrastructure and maintenance projects. Create master list. Map projects *

Develop a master list and map of annual and 5-year projects from the departments to review opportunities to leverage funding and implement Complete Streets projects. The possibility of developing an interactive or web map should be reviewed to further coordinate the process.

ACTION 10: Establish a formal Complete Streets Advisory Board/Committee*

The Board should include geographically diverse members and stakeholders from businesses and organizations who meet regularly each quarter. The Board would serve as a public review committee to discuss and review Complete Streets projects in the City with technical guidance from staff.

ACTION 11: Provide training and educational opportunities for staff from interdepartmental review team on national Complete Streets best practices and innovations*

Training and education can be provided to learn best practices from FDOT, NACTO, Institute of Transportation Engineers, and Federal Highway Administration.

Capital Improvement Projects

Capital Improvement Projects construct the physical improvements needed to create a well-designed and interconnected multimodal transportation network. Planning and Development will need to coordinate design recommendations and concepts with other departments, particularly Engineering and Parks and Recreation, to ensure that they are feasible, constructible, and address continued maintenance. Impacts on drainage and utilities will also be reviewed to determine feasibility and cost. Capital projects include standalone projects, projects during maintenance or resurfacing, or quick builds.

Key Actions

ACTION 14: Enact temporary pop-up or demonstrations that assess/lead to Quick Build Projects*

Quick build projects are planned with the expectation that the design may undergo changes in the future with minimal investment. Quick Build Projects fit between pop-up projects and capital projects. Like permanent capital improvement projects, they are durable for months or years, and can be pilot or interim projects. Pilot projects test solutions before a significant investment is required. Interim build projects provide the benefits much earlier than otherwise would be available.



ACTIONS FOR IMPLEMENTATION

Key Actions

ACTION 15: Pursue dedicated and additional funding for Complete Streets*

The City will seek diversified funding to not only mitigate larger infrastructure costs such as street re-designs, intersection projects, or even resurfacing, but also to focus on other less expensive interim Complete Streets projects, such as re-striping, signal timings, neighborhood greenways, and street trees. The City will also work with regional and local partners to fund Complete Streets projects.

City of Clearwater

- Dedicate funding from multimodal impact fee, general funds, and Penny for Pinellas IV
- Leverage Tax Increment Financing (TIF) funding for Complete Streets projects in Downtown
- Develop 5-year and annual project priority lists to support securing funding
- Consider adopting an internal review process similar to county's Portfolio approach

Local City Partners

- Coordinate with local partners to fund Complete Streets projects that are adjacent to the City and leverage funding

Pinellas County

- Fund projects within the City using Penny for Pinellas IV funding
- Support Pinellas County on increasing the available gas tax millage and indexing the gas tax

Florida Department of Transportation

- Work with FDOT on their Complete Streets efforts and fund projects within the City, especially on SR 60
- Pursue Safe Routes to School funding and Surface Transportation Program (STP) dollars



Forward Pinellas

- Pursue additional Forward Pinellas Complete Streets concept and construction, transit-oriented design, or placemaking grants
- Coordinate on transportation alternatives funding
- Coordinate on recreational trails funding
- Program projects into the TIP and LRTP including trail and bicycle improvements

Pinellas Suncoast Transit Authority

- Work with Pinellas Suncoast Transit Authority (PSTA) to prioritize funding for improvements such as stop improvements on streets with high performing transit routes (i.e. SR 60, US 19, Alt US 19, etc.)
- Seek grants and funding for transportation disadvantaged areas that could include demand response service

Other Opportunities:

- State Infrastructure Bank Loans: Loan from the State of Florida for the development of Infrastructure Projects
- Environmental Protection Agency (EPA): Grant opportunities for green infrastructure and landscaping, healthy communities initiatives, and brownfields
- Housing and Urban Development (HUD): Community Development Block Grant Program (CDBG) grants to benefit low to moderate income persons and communities, sustainable communities grants



ACTIONS FOR IMPLEMENTATION

POLICY AND REGULATORY IMPROVEMENTS

PROJECT DELIVERY AND PROCESS IMPROVEMENTS

CAPITAL IMPROVEMENT PROJECTS

MEASURING AND EVALUATING PERFORMANCE

Measuring and Evaluating Performance

The Guiding Principles in [Section 1](#) provide the framework for transportation improvements that develop a multimodal mobility system. This system must be safe, accessible, and efficient for people of all ages and abilities. Performance measures evaluate the success of future developments, local, and regional programs and City improvements in achieving the principles. Performance measures for each guiding principle are listed below from a Citywide perspective. Specific Complete Streets projects should also be measured for effectiveness after construction.

| Measure | Complexity | Data Source |
|--|-------------|--|
| Safe and Comfortable Travel | | |
| Number of vehicle, pedestrian and bicycle crashes (include fatalities and severe injuries) | Low | Forward Pinellas |
| Percent of total streets where posted speed is within target speed range | Medium | City/Forward Pinellas |
| Number of crossings | Low | City/Pinellas County |
| Accessibility | | |
| Bus ridership(include ridership per hour) | Low | PSTA |
| Miles of sidewalk and bicycle gaps filled | Medium | City/Pinellas County/Forward Pinellas/FDOT |
| Percent of community centers connected to sidewalks/bicycle facilities | Low | City |
| Multimodal Mobility and Technology | | |
| On-time performance for transit | Low-Medium | PSTA |
| Number of intersections with adaptive signal control | Low | City/Pinellas County/FDOT |
| Number of signals optimized | Medium-High | City/Pinellas County/FDOT |
| Connected and Inviting | | |
| Average trip length and vehicle miles traveled | Medium | City/Forward Pinellas/FDOT |
| Transit access within 1/4 mile residences | Low | City/PSTA |

| Measure | Complexity | Data Source |
|--|-------------|---------------------------------------|
| Economic Vitality and Placemaking | | |
| Vacancies and new developments on Complete Street corridors | Medium-High | City |
| Sales tax revenues on Complete Street corridors | Medium-High | City/Pinellas County |
| Length of transit focused corridor (Encourages transit-oriented development) | High | City/PSTA/Forward Pinellas |
| Community Health | | |
| Percent of population within 1/2 mile of multi-use trails | Medium | City |
| Average pedestrians and bicyclists per mile | Medium | City |
| Response time of emergency vehicles | Low | City/Pinellas County |
| Social Equity and Investment | | |
| Percent of disadvantaged population within 1/4 mile of a transit stop | Low | City/PSTA/Forward Pinellas |
| Percent of disadvantaged population within 1 mile of employment center | Low | City/PSTA/Forward Pinellas |
| Number of Complete Streets and other mobility related events | Low | City/PSTA/Forward Pinellas |
| Community Character and Context Sensitivity | | |
| Annual review and update of Complete Street codes/ordinances | Low | City |
| Percent of arterial and collector streets in neighborhoods where posted speed is within target speed range | Medium | City/Pinellas County/FDOT |
| Environmental Protection and Sustainability | | |
| Percent reduction in greenhouse gas emissions | High | Pinellas County |
| Percent reduction in average miles traveled in a personal vehicle | Medium | City/Pinellas County/Forward Pinellas |

APPENDIX

- Outreach and Engagement Summary
- City Department Interviews
- Design Standards and Plans
- Hot Spot Issues and Maps
- Existing Transportation Conditions and Tourism



APPENDIX

Outreach and Engagement Summary

The Complete Streets for Clearwater Implementation Plan development included several outreach activities to obtain local and regional feedback on transportation objectives, priorities, challenges, and opportunities. These activities included two community workshops, an online survey, City Council meetings, and Complete Streets Committee meetings. All of these activities assisted the City in the crafting of its final recommendations.

Complete Streets Advisory Committee

The Complete Streets Advisory Committee consisted of 22 individuals, many representing a specific interest group, who assisted the City of Clearwater in developing Complete Streets plans that holistically address the bicyclist, pedestrian, and driver needs on City streets. The Advisory Committee met three times to provide feedback and insights in crafting the Plan. Below is a brief summary on the three meetings.

May 1, 2018

On May 1, 2018, the Advisory Committee discussed their personal, interest group, and public opinions of City streets and mobility. Committee Members participated in three activities to gauge their preferences for areas of concern and types of improvements desired.

July 10, 2018

On July 10, 2018, the Advisory Committee discussed their preferred concepts for reconstructing Drew Street as a more Complete Street. Committee Members recommended including performance measures and project guidelines for Complete Streets projects in the Implementation Plan.

December 4, 2018

On December 4, 2018, the Advisory Committee gathered to discuss progress on the Complete Streets for Clearwater Implementation Plan, the first community workshops, and next steps to finalize the plan. Committee Members participated in interactive exercises, prioritized transportation improvements, and identified areas of concern for bicyclists, pedestrians, and roadway users. Infrastructure improvements that received prioritization included sidewalks, pedestrian crossings, and intersection improvements.

APPENDIX

Community Workshop # 1

The first City of Clearwater workshop was held on two separate nights, October 23 and 24, 2018, at the Ross Norton Recreation Center and the Countryside Recreation Center, respectively.

The open house format presented participants with the study objectives, typical Complete Street elements, and relevant demographic information (population, employment, facilities etc.). Following the presentation, participants engaged in a variety of activities designed to learn their thought about transportation problem areas and to describe their vision of the future transportation facilities for the City.

Results showed that improving safety and providing multimodal options were the top priorities. Specific improvements include shared use paths/trails, sidewalks, intersection improvements, and pedestrian crossings. Specific problem areas identified include Drew Street, Gulf to Bay Boulevard, Countryside Boulevard area, and Cleveland Street. Overall, participants indicated a need for safe and comfortable facilities for all modes of transportation and increasing the options for bicyclists.



Community Workshop #1 Presentation

Community Workshop # 2

The second City of Clearwater workshop was held on February 12, 2019, at the East Community Library at St. Petersburg College. The open house format presented participants with the study's purpose and importance, tools for designing Complete Streets, land use and roadway context classifications, strategies, opportunities, and policy changes for Complete Streets. Boards set up around the room included results from the public outreach survey conducted for the study, a draft of the roadway context classifications, and strategies for implementing Complete Streets. Comment cards were available for further input on the study draft.

Most of the priorities identified by participants involved improving transportation safety and efficiency. Participants suggested overall improvements including intersection improvements, resurfacing, and additional travel options, such as expanded sidewalks or multi-use trails. Participants also mentioned specific improvements for Drew Street, a main collector, such as maintaining the speed limit, installing dynamic speed tracking signals, and placing barriers between car travel lanes and bike lanes. Generally, the results from the workshop indicated residents' desire for efficient roadways and dynamic multimodal facilities.

Survey

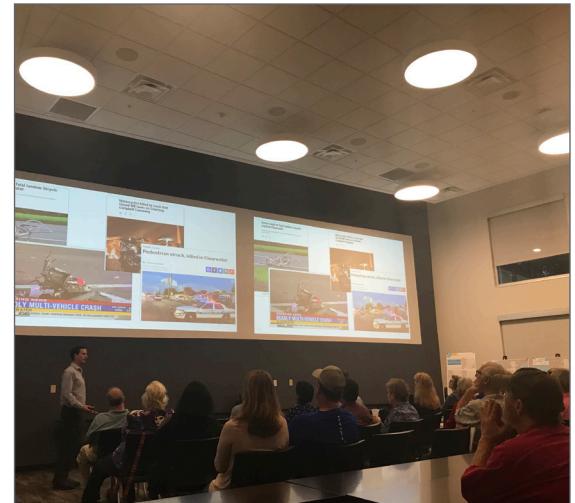
In addition to the two workshops, an online MetroQuest survey allowed the community to provide feedback on what improvement types, specific projects, and guiding principles are most essential to creating a comprehensive mobility network in the City.

Top 5 types of comments Travel habits

1. Congestion
 2. Intersections
 3. Speed/Safety
 4. Bike Facilities
 5. Sidewalks
- Drive alone 82.39%
 - Carpool 8.52%
 - Walk 3.41%
 - All others less than 1%

Survey

- Over 900 Responses
- 190 Comments
- 274 Email Addresses



Community Workshop #2 Presentation



Community Workshop #2

APPENDIX

City Department Interviews

Each City Department provided feedback on action items, resources, and current projects that impact the transportation network.

Economic Development and Community Redevelopment Agency

- Coordinate on Complete Streets opportunities with prioritized brownfield sites and neighborhoods revitalization strategy areas (NRSAs)
- Involve in project review process
- Identify opportunities with Community Development Block Grants (can be used for bus stops and sidewalks)
- Update and map low and moderate income areas
- Coordinate with public health initiatives

Emergency Management

- Coordinate annually to discuss travel times
- Map evacuation routes and coordinate on potential Complete Streets projects on these corridors
- Coordinate on per-incident plans and street changes
- Involve with designs that may involve narrower lane widths, medians, smaller turn radii, roundabouts, traffic calming
- Partner with for public workshops and educational outreach
- Consider needs with development review
 - Front parking needs to be available, less than 200 feet away and high-rise sites need pre-planning
 - Re-enforce sidewalks for outrigger support



Parks and Recreation

- Provide list of projects annually
- Review 30% plans
- Development Review Committee feedback on select projects
- Implement trail connections to parks (Morningside Recreation Trail to Duke Energy Trail, McMullen to Tennis Complex)
- Update Bicycle/Pedestrian Master Plan
- Focus on landscaping maintenance (required space for healthy trees in the right-of-way) and provide flexibility in types of landscaping
- Line up pedestrian crossings
- Implement wider sidewalks (+6 ft.)

Police Department

- Coordinate annually to discuss travel times
- Involve with designs that may impact response time involve traffic calming specifically speed humps (look to include speed cushions)
- Coordinate to understand safety hot spots particularly schools

Solid Waste and Recycling

- Involve with designs that may involve narrower lane widths, medians, smaller turn radii, roundabouts, traffic calming
- Coordinate if SR 60, Drew Street, or Old Coachman Road are changed. Look at no right turn on red at Drew Street and Old Coachman Road
- Review a traffic calming map to identify issues
- Consider partnering with Dunedin in future use stations
- With street design include mountable curbs, t-turns, cul de sacs, aprons, speed humps/tables with straddling (speed cushions)
- Landscaping maintenance for trucks

Traffic Operations

- Coordinate on projects on the front end
- Planning & Development to review FDOT and Pinellas County plans
- Review 5 year list of resurfacing projects for Complete Streets opportunities
- Review subdivision and access management standards to reduce driveways
- Amend policy requiring 51% support by neighbors prior to installing new sidewalks

Stormwater and Utilities

- Tie streetscaping projects in with utility projects
- Create centralized list of projects and provide to Planning & Development
- Include Planning & Development and Economic Development in project scope meetings
- Examine Complete Streets opportunities with right-of-way permits through land development review and options for privately funded improvements
- Designate point person for stakeholder meetings and inter-agency coordination
- Education on planning design guidance



APPENDIX

Design Standards and Plans

City of Clearwater Context Zones



FDOT Context Zones

Special Districts/Considerations:

- US 19
- Industrial Areas

NACTO Urban Street Design Guide

NACTO guides are supported by the FHWA in designing safe multimodal facilities. Most of the recommended treatments are either supported by or not impeded by the Manual for Uniform Traffic Control Design standards (MUTCD). This toolbox of strategies and tactics enables practitioners to employ strategies that make streets safe, livable, and lively. This guide includes tools on every mode of transportation and specific intersections design elements.

NACTO Urban Bikeway Design Guide

The Urban Bikeway Design Guide is designed to create unique solutions for every kind of urban street. The guide provides three levels of guidance: required, recommended, and optional. The guide also includes strategies for all bicycle user ages and abilities.

NACTO Urban Street Stormwater Guide

The Urban Street Stormwater Guide provides best practices for sustainable stormwater management within the right-of-way. The guide was developed by public works, transportation, and water departments to provide policy and program strategies on green infrastructure, innovative street design, performance measure of streets, and site design for bioretention facilities.

NACTO Transit Street Design Guide

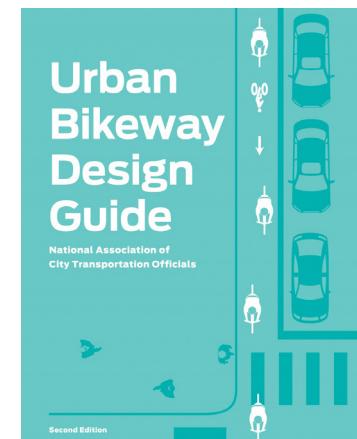
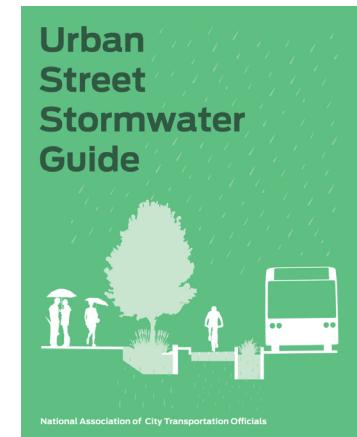
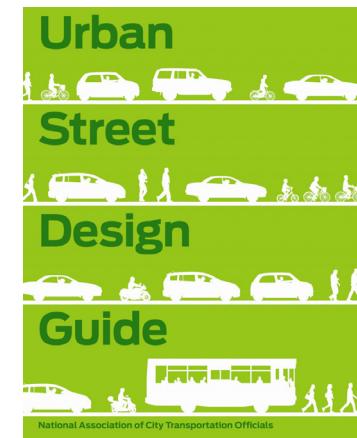
The Transit Design Guide provides design guidance for transit facilities and transit service on City streets. Transit design goes beyond enhancing transit stops and involves creating transit friendly intersections and travel lanes and implementing smart technology to enhance rider quality.

Florida Department of Transportation Design Manual (FDM)

The FDM establishes geometric and design criteria for the FDOT projects. The FDOT context classification guide defines eight context classifications that define various built environments. Each context has specific transportation and land use characteristics, development patterns, and design criteria that guide the planning of roadway design elements. Different street elements are essential to different built environments, such as urban and suburban. This context-based approach ensures that user needs and transportation functions are incorporated into the planning process.

AASHTO A Policy on Geometric Design of Highways and Streets (AASHTO Green Book)

The AASHTO Green Book is a comprehensive reference manual that provides guidance for planning, education, and administrative efforts in formulating street design standards. The current 2018 edition specifically addresses geometric design elements of highways and streets.



APPENDIX

US Department of Transportation, Federal Highway Administration: Achieving Multimodal Networks: Applying Design Flexibility and Reducing Conflicts

This Federal guidebook supports practitioners on transit access, road diets, and intersection design. The goal of this guide is to provide creative solutions that help practitioners reduce multimodal conflicts, enhanced network connectivity, and apply design flexibility.

Institute of Transportation Engineers (ITE)

Designing Walkable Urban Thoroughfares: A Context Sensitive Approach

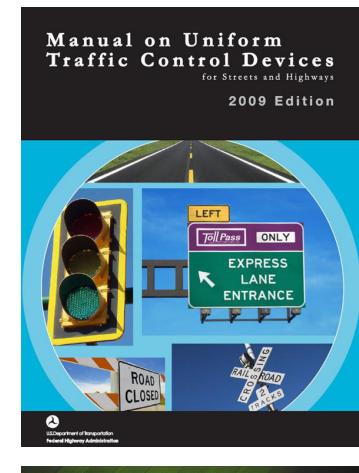
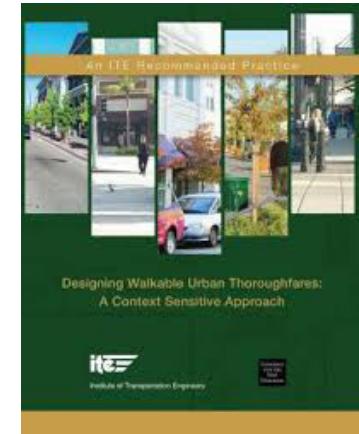
The ITE guidelines are a context sensitive methodology for land use and building form and matching street elements and context zones. The purpose is to instruct practitioners in utilizing context-sensitive elements in Complete Streets designs. A thoroughfare type is also provided instead of the traditional functional methodology.

ITE Implementing Context Sensitive Design on Multimodal Thoroughfares: A Practitioner's Handbook

The 2017 update to the first ITE guide provides guidance on transitioning urban and suburban areas into walkable and multimodal communities. Understanding the project corridor and surrounding land context allows a community to link physical street elements to multimodal goals and policies.

MUTCD Green Book

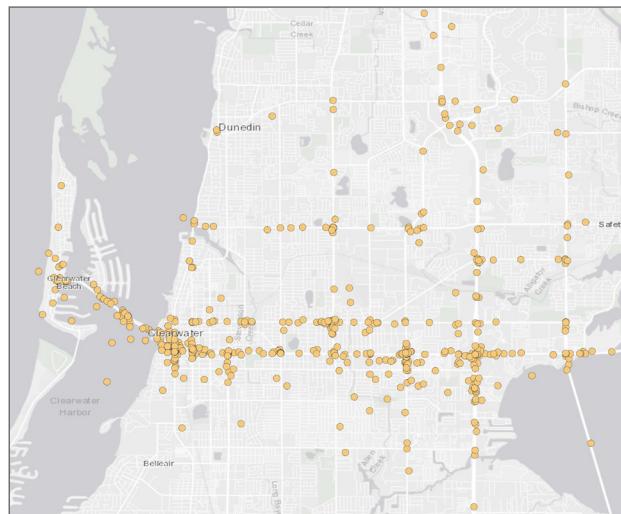
The MUTCD is published by the Federal Highway Administration and defines the nationwide standards on traffic control device installation and maintenance on public streets, highways, and bikeways. In addition, it defines the standards for pedestrian and bicycle control signals, lane markings, and signage to ensure adequate space and warning is given to vehicular users. The MUTCD was updated in 2018 to include new technologies to better support connectivity, safety, and efficiency in the transportation network.



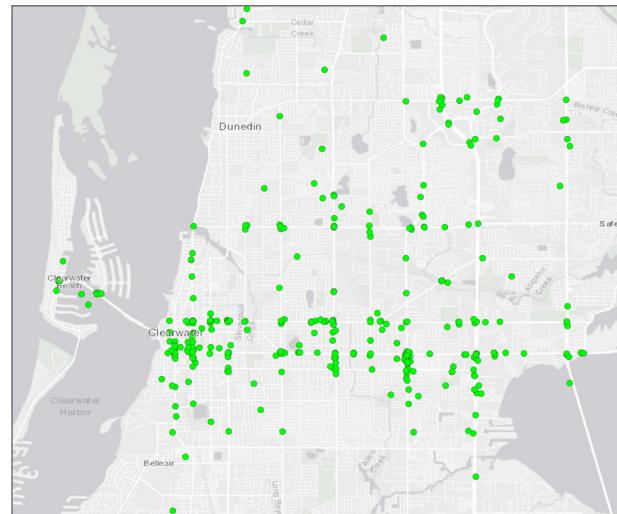
Hot Spot Issues and Maps

The Citywide MetroQuest survey taken by over 900 participants generated Hot Spot Maps. The survey gathered input on five subject areas: congestion, intersections, sidewalks, speeding, and transit. Dots placed by survey users identified specific concerns or needs for improvements. Based on the maps, major hot spot corridors and nodes include Drew Street, Ft. Harrison Avenue, SR 60, US 19, and Downtown Clearwater.

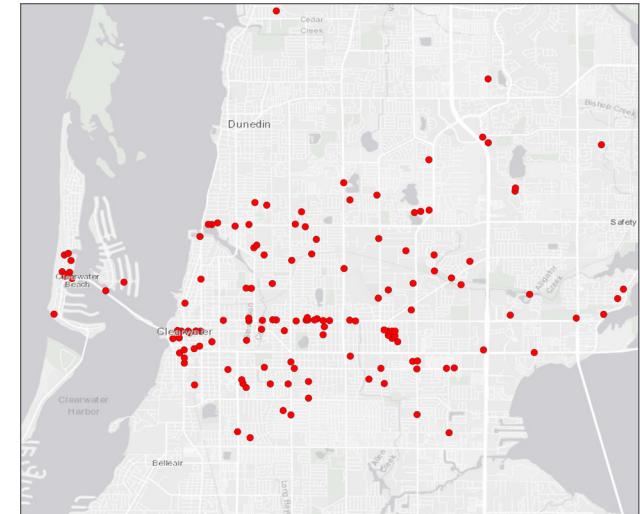
Congestion



Intersections



Sidewalks



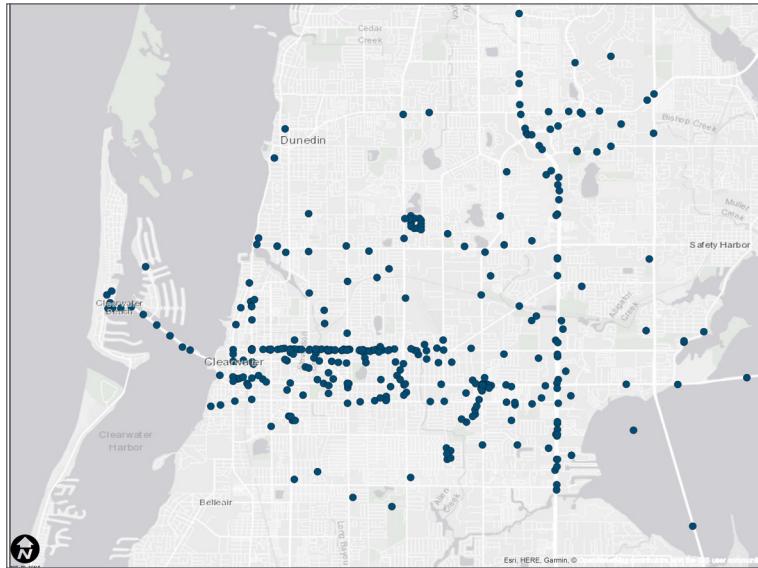
- Heavy congestion on east-west roadways
- Congestion during rush-hour
- Congestion from beach traffic

- Dark, unlighted intersections
- Need crosswalks
- Long traffic lights
- Need better synchronized signals
- Accidents at on/off ramps and frontage roads
- Dangerous intersections for pedestrians

- General lack of sidewalks or gaps in sidewalk network
- Uneven or broken sidewalks in need of repair
- Sidewalks too close to the road-feels unsafe

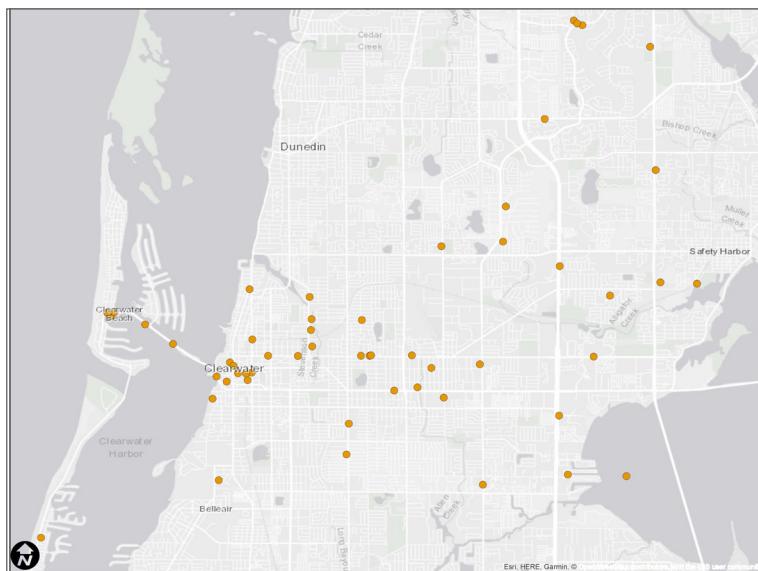
APPENDIX

Speeding



- Speeding on Drew Street and SR 60
- Need traffic calming measures
- Speeding vehicles deter residents from bicycling and walking

Transit



- Buses do not go where residents want to go
- Bus trips take too long
- Make bus trips more direct and faster
- Increase frequency of routes
- Add bus shelters at stops
- Park and ride for the beach

Existing Transportation Conditions and Tourism

Street Type Mileage

Arterial:
56.9 miles (11%)

Collector:
58.1 miles (11%)

Local and Community:
417.4 miles (78%)

Total: 532.4 miles

| Roadway Type | | |
|--------------|---------------|-------------|
| Type | Miles | Percent |
| State Road | 32.13 | 24% |
| County Road | 44.31 | 33% |
| Local Road* | 56.14 | 43% |
| Total | 132.58 | 100% |

* Does not include Neighborhood Streets

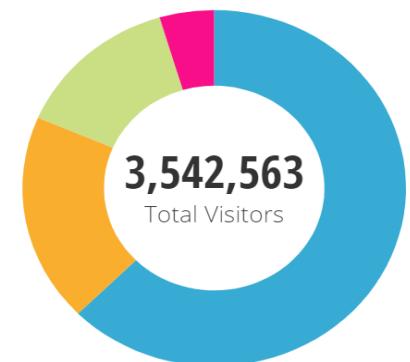
| Existing Multimodal Facilities | |
|--------------------------------|--------|
| Type | Miles |
| Trails | 46.95 |
| Sidewalks | 493.91 |
| Bike Lanes | 27.60 |
| Truck Routes | 56.08 |

Total Visitors by Airports January 2018-November 2018

| | |
|--------------------|------------------|
| Tampa | 2,216,351 |
| Orlando | 669,708 |
| St.Pete-Clearwater | 493,768 |
| Miami | 162,736 |
| Total | 3,542,563 |

Chart Legend

| | |
|---------------------|--------|
| Tampa | 62.6 % |
| Orlando | 18.9% |
| St. Pete-Clearwater | 13.9% |
| Miami | 4.6% |



Source: Visit St. Pete/Clearwater

