



COMPLETE STREETS POLICY

NOVEMBER 2018



ARLINGTON 
COMPLETE STREETS     

Acknowledgements



City of Arlington Community and Economic Development Staff

Nova Heaton, P.E.
Launa Peterson
Marc Hayes



Toole Design

Kristen Lohse, ASLA
Katherine Knapp de Orvañanos
Brian Almdale
Carol Kachadoorian
Amalia Leighton, PE, AICP



BHC Consultants

Becca Ochiltree
Carla Talich

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Terminology and Acronyms

The following is a list of phrases and acronyms used throughout this document and commonly used by City of Arlington planners, designers, and officials.

Terms

85th percentile speed – The speed at which 85 percent of motor vehicle traffic travels at or below. This is a common measurement used to determine whether people are driving at or near the intended speed of a street; see *target speed*.

All Ages and Abilities – A term used to denote a philosophical approach to the design of bicycle facilities that is inclusive of a wide range of cyclist skills, abilities, and confidence, including children and older people; sometimes referred to as ‘8-80’, as in 8 to 80 years old.

city (uncapitalized) – The geographic area known as Arlington; this term is used when referring to Arlington as a place.

City (capitalized) – Short for City of Arlington; this term is used when referring to the City government, which (along with WSDOT) is responsible for planning, designing, constructing, and maintaining Arlington’s transportation system.

Guide – A non-binding document that provides best practices (or a summary of standards) for planning and design; see *standard*.

Mode shift – A shifting of trips from one mode to another, typically from motor vehicle to transit, walking, or biking.

Person miles traveled (PMT) – A measurement of how many cumulative miles individuals travel in a given period of time; one person driving one mile equates to one-person mile traveled, while 25 people riding a bus one mile equates to 25-person miles traveled; see *vehicle miles traveled*.

Plan – Short for the City of Arlington’s Complete Streets Policy (this document.)

Right-of-way (ROW) – Land owned or granted by easement to the City or WSDOT for transportation purposes; this term is often used to refer to the public land outside of the roadway in which sidewalks, landscaping, and set-backs are present.

Roadway – The paved or unpaved area meant for conveying motor vehicles and bicycles, including all through lanes, turn lanes, bike lanes, paved shoulders, medians, curbs, and gutters.

Single Occupancy Vehicle (SOV) – A vehicle that only contains a driver and no additional passenger.

Standard – Usually a non-binding parameter (or set of parameters) that specifies the typical treatment for a design feature (such as bike lane width); non-binding standards can be deviated from so long as adequate documentation and justification is provided; Board of Public Roads Classifications and Standards are mandated by state statute and dictate minimum lane width.

Street – The entirety of a transportation corridor, including the roadway, pedestrian spaces, landscaped areas, and even building facades; a holistic concept in which transportation, land use, character, economics, and quality of life should be considered equally.

Target Speed - The speed at which people are expected to drive; the target speed is intended to become the posted speed limit.

Typology – A defined street type (whether existing or potential) in Arlington used to describe the general design, function, and character of a street design; the Plan includes eight street typologies.

Vehicle miles traveled (VMT) – A measurement of how many cumulative miles are traveled by motor vehicles; one person driving one mile and 25 people riding a bus one mile each equates to one vehicle mile traveled; see *person miles traveled*.

Acronyms

AASHTO – American Association of State Highway and Transportation Officials; AASHTO has produced numerous design guides and standards that tend to be conservative and are based on demonstrated designs.

BCC – Boards, committees, and commissions; policy and program decision making bodies for the City of Arlington, which includes the City Council

CSP – Complete Streets Policy

FHWA – Federal Highway Administration; a division of the US Department of Transportation

GSI – Green Stormwater Infrastructure; a variety of systems or practices used in the street right-of-way to manage stormwater flows naturally, or to improve water quality including vegetation, soil, and other elements.

LID – Low Impact Development, refers to systems or practices that use or mimic natural drainage processes including infiltration, evapotranspiration, to protect water quality.

M&O – Maintenance and operations; this is a category of street projects that is not typically conducive to incorporating changes to the roadway or right-of-way.

NACTO – National Association of City Transportation Officials; NACTO has produced multiple design guides that incorporate innovative and sometimes experimental approaches to street design.

WSDOT – the Washington State Department of Transportation.

Executive Summary



Figure 1. Downtown Arlington Street Fair. Photo credit: Downtown Arlington

Introduction

Community design in America has been focused on automobiles for more than 50 years. In that time Americans are getting less exercise, diseases linked to inactivity have skyrocketed, and obesity has increased in both adults and children. The City of Arlington recognizes that the design of its roadways and transportation system has effects beyond safety mobility and the effects extend to the aesthetics, economic vitality, livability, and health of its residents.

In 2017, the City of Arlington adopted a Complete Streets Resolution that aims to address the needs of all users when development and redevelopment of transportation corridors are proposed within the City. This includes, in addition to people who drive, family and commuter cyclists, pedestrians, people with accessibility needs, and people who use transit.

The Complete Streets Program outlined in this plan is about re-thinking the way the City lays out roads to embrace the larger community goals. Providing safe routes to school may give parents the peace of mind

they need to allow their kids to bike or walk to school. A trail between your housing development and local grocery store may increase your likelihood to walk for milk and eggs. A bike lane and secure bike parking might make it possible to leave your car at home in the morning on your way to catch your bus or vanpool. Creating a walkable community may not change your habits, but if our children begin to think in a different way we can improve their future health.

The Complete Streets Policy offers an organized look at how the City implements and monitors progress on complete streets. Through the Pedestrian and Bicycle Improvement Plans, Transportation Expansion Plan and other design guides and standards it summarizes the elements of development that should be expected for new projects based on location and zoning. Providing comprehensive Pedestrian and Bicycle Improvement Plans ensures connectivity throughout the city without building unnecessary facilities. In general, the requirements summarized in the Complete Streets Policy already exist in the Development Code, Form Based Code, and Engineering Design Standards. This plan summarizes policies, plans, and standards that will help guide future development of streets to ensure that development is consistent with the City's vision for a healthy, accessible community, and that the City maintains its local character.

The plan incorporates input from City Council Members, the Mayor, a Complete Streets Advisory Committee, as well as the public. A key component of the plan is a Complete Streets Checklist. Implementation of the Complete Streets checklist will assist City Staff in applying Complete Streets principles and design standards to projects moving forward and will set community standards within the development community.

The design standards outlined in this document are intended to facilitate the design and construction of a street network that better accommodates all transportation modes and users in the city, by addressing street and right-of-way features that affect user safety, speed, and comfort. The design standards are discussed in Chapters 3 and 4.

Plan Contents

The plan begins with a summary of the City's Complete Street Policy and describes how this plan and the guidance and recommendations within will help the City implement the policy and facilitate the design and construction of a Complete Streets network with a particular focus on designated corridors.

The plan includes an exploration of the importance and benefits of Complete Streets for Arlington. To provide additional context and perspective, case studies of other Complete Streets communities are studied and summarized.

Summary Complete Streets Components

A discussion of each of the development components of complete streets is provided below, including how this differs from existing regulations and requirements.

- Transportation – Street width, number of lanes, and speed limit shall be determined by the City of Arlington Transportation Improvement Plan (TIP), a current part of the Comprehensive Plan. For streets not covered in the TIP, land use shall dictate appropriate roadway configuration with approval from the City. *This is not a change from current procedure.*
- Pedestrian – City code and standards govern requirements of pedestrian facilities. The Pedestrian Improvement Plan (PIP) shall determine if additional requirements are required. The PIP shall be

incorporated into the Comprehensive Plan during the next update and will supplement the existing multimodal plan. *The PIP is a new more comprehensive addition to current procedure intended to clarify and improve connectivity within the city and transparency regarding pedestrian facility requirements.*

- Bicycle – City code and standards govern requirements of bicycle facilities in conjunction with the Bicycle Improvement Plan (BIP) attached in the appendix. The BIP shall be incorporated into the Comprehensive Plan during the next update and will supplement the existing multimodal plan. *The BIP is a new more comprehensive addition to current procedure intended to clarify and improve connectivity within the city and transparency regarding bicycle facility requirements.*
- Transit – City code and standards govern requirements of transit facilities. The City, working with Community Transit shall work to finalize the Transit Expansion Plan (TEP). The TEP shall influence the location of future transit routes and stops. The TEP shall be incorporated into the Comprehensive Plan during the next update and will supplement the existing multimodal plan. *The TEP is an update to the existing Multimodal Plan that is intended to clarify and future routes and ensure transit facilities are being adequately planned for.*
- Freight – The City’s freight routes, as summarized in the Comprehensive Plan shall dictate pavement structure to ensure long term durability of pavement. *This is not a change from current procedure.*
- Street Lighting – City code and standards govern the requirements for street and pedestrian lighting facilities. The City has included, in the appendix, Street Lighting Guide to detail style and requirements of all new light fixtures and poles. Lighting shall be of approved equal to the examples shown. *The Street Lighting Guide is a reference document to provide more information to developers regarding the type and style of light standards required by current code.*
- Median Design – The Median Design Guide provides general color, layout, and style for planted medians within the right of way. The use of the guide is to provide a consistent look throughout the city that considers maintenance and safety in addition to plantings and artwork. Street trees and other plantings shall be per the City of Arlington approved plant list, or approved equal. All artwork shall be approved through the Public Art Committee. *The Median Design Guide is a new reference document that supports existing city code and design standards intended to unify aesthetics throughout the City of Arlington.*
- Artwork – Working with the Public Art Committee the City encourages use of artwork in public spaces. *There are no new requirements for public art, this encourages the use of public art and provides direction for how to get public art approved.*
- Low Impact Design – The City of Arlington standards for stormwater detention and treatment are determined by the current edition of the Department of Ecology Stormwater Management Manual for Western Washington. Low Impact Design is required as part of all stormwater management if feasible. *This is not a change from current procedure.*
- Project Prioritization – The Complete Streets Policy outlines a procedure for prioritization of public complete streets projects to encourage equity. *This is a new procedure that will be used for any public project that is considered to be a Complete Streets Project.*
- Complete Streets Checklist – The checklist shall be used on all projects within the city applied for after adoption of the Complete Streets Policy. It is a planning tool that assists the designer in

considering all components of Complete Streets within Arlington. The checklist ensures consistency and transparency for all projects. *This is a new procedure that will be used on all public and private projects during the Land Use and Civil submittals and is included in the application checklist.*

For City of Arlington Staff

The plan delves into the City's current challenges and opportunities in implementing Complete Streets given the City's current staffing roles and responsibilities; it also examines planning and policies and provides policy and staff coordination recommendations and a section on funding.

In terms on implementation, the plan also provides recommendations for ongoing oversight, reporting, and evaluation metrics to monitor progress over time.

For Developers and City Staff

There is an overview of the project development process, along with design standards and roadway geometry examples for the development of designed Complete Streets corridors, and the Complete Streets Checklist. The standards address a wide range of corridor design elements and space requirements. The Complete Streets Checklist, as adopted via an ordinance by the City Council, will serve as the governing decision-making tool, and is a required for applicable developments as part of the development checklist. The variance procedure can be found in the municipal code. These tools will help both developers and City staff understand the nuts and bolts of creating a Complete Streets corridor.

Key Takeaways and Conclusion

Implementation of the Complete Streets program is based on the organizing principle of connectivity and directs the development of a program that addresses policy and planning.

The Checklist is a tool to help the City and Developers consider all aspects of a complete street, ensure The Policy creates a method to track and ensure projects have considered all users from design implementation through construction.

This plan benefits from a review of the experience of other communities, and includes a suite of tools and design guidance, including updated network planning for bicycles, pedestrians, and transit. It also addresses implementation challenges and opportunities, including funding, organizational structure and responsibilities, and design standards. The Complete Streets Policy will be adopted by ordinance and codified by integration into the comprehensive plan.

1.0 Introduction and Overview Located within the Stillaguamish River Valley, Arlington is home to over 19,000 people and has a strong sense of community pride. Arlington’s close-knit community enjoys both a traditional downtown, recreational spaces, and room to grow along Smokey Point Boulevard. As Arlington continues to grow so too are local demands for mobility options for residents, employees, and visitors.

Arlington’s proximity to Everett and Seattle, along the Interstate 5 corridor, and location along the Stillaguamish River and the Centennial Trail make it an ideal place for many to work, live, and visit. Additionally, walking and bicycling in Arlington is physically possible and attractive for a wide range of the population and of the year due to the city’s relatively flat topography and temperate climate, with a notable rainy season in the winter. Bus service provided by Community Transit provides connections between the downtown and Smokey Point Boulevard district, and to communities from Seattle, Everett, and onto Darrington.

The City of Arlington has made significant strides forward in preparing for future population growth and development opportunities with investments in a Transportation Benefit District, update of the Comprehensive Plan, and development of a Mixed Use Overlay Development Code. The region’s trail network is poised for growth with the 2015 North Stillaguamish Valley Economic Redevelopment Plan, and recent investments by the City in its trail connections. Such planning and investments create opportunities for Arlington to retain its hometown feel and meet its mobility needs by taking a Complete Streets approach.

1.1 Why Complete Streets for Arlington

Arlington’s transportation network connects its community members to schools, jobs, shops, parks, community events, and to their neighbors. The Complete Streets program will improve access and safety for all community members to the streets, sidewalks, and trails that connect Arlington. In 2017, the Arlington City Council passed a resolution that adopted a Complete Streets policy and directed staff to develop a Complete Streets program. In Arlington, Complete Streets means,

A comprehensive, integrated transportation network with infrastructure and design that allows safe and convenient travel along and across streets for all users, including pedestrians, bicyclists, transit riders, and motorists that accommodates people of all ages and abilities.¹

Complete Streets are streets for everyone, no matter who they are, or how they travel. The Complete Streets Policy, this document, provides design guidance for reimagining and developing transportation network with land use, local context, and multiple modes in mind. Planning and designing for community members to move, access, and connect in Arlington – regardless of their age, ability, status, or travel mode – will support Arlington’s livable future.

Implementation of the Complete Street Policy has the potential to improve the livability of Arlington. By creating a transportation network that supports multiple modes of transportation, the application of Complete Streets principles can help to increase access to and the safety of all transportation options. As Arlington community members and visitors are safer and feel more comfortable biking, walking, or taking transit, more travelers will choose a mode of

¹ City of Arlington, Council Agenda Bill, Item WS#3 Attachment E, Resolution for Complete Streets Program: November 13, 2017.

transportation other than a personal vehicle. At a community-wide level, these individual transportation choices can collectively reduce vehicle traffic congestion and associated air quality concerns. By accommodating and encouraging active modes of transportation—through walking to a bus stop or biking to work— Complete Streets also support public health and active living goals.



Figure 2. Downtown Arlington

Communities where mobility is primarily focused on automobile connectivity creates challenges for citizens to walk, bike, or take transit. This often disproportionately affects low income, minorities, the elderly, and people with disabilities. Implementation of the Complete Streets Policy will work towards creating

transportation equity and providing economic opportunity for non-auto users.

Applying the Complete Streets approach to existing and new roadways can support existing historic characteristics, create new connections between neighborhoods, and plans for development and growth. Complete Streets also helps the City better accommodate and coordinate public investments like streetlights, street trees, stormwater infiltration, and utility corridors. Through the implementation of the Complete Streets Policy, the City will not only improve the safety of the transportation system but ensures that streets and public rights-of-way better serve the community.

1.2 Complete Streets Program

The City of Arlington committed to developing and enacting a city-wide Complete Streets program in November 2017. As outlined in the City’s Complete Streets Resolution, the purpose of Arlington’s Complete Streets program is to:

...[create] a true multimodal transportation network that is designed and operated to be safe, comfortable, and convenient for all users – pedestrians, bicyclists, motorists and transit rides of all ages and abilities. Complete Streets is also about transforming streets into environments that provide for a sense of belonging and engagement and ultimately creating a more livable community.

1.2.1 Complete Streets Policy

Summary

Arlington’s Resolution calls for the City to develop a multimodal transportation plan that meets the needs and abilities of roadway users of all ages and abilities. The Resolution also highlights the City’s identified need to accommodate pedestrians, bicyclists, transit users, motorists, emergency responders, and

freight providers on its transportation network. Finally, the Resolution called on the Department of Public Works and Department of Community and Economic to work collaboratively on preparing a Complete Streets Program for the Council’s consideration by November 2018. The Program is to include:

- Metrics for all modes of transportation based on local connectivity assessments for pedestrian, bicycle, transit, and automobile travel; and,
- Specific design standard details with Public Rights-of Way requirements such as Low Impact Development
- Storm water facilities, utility placement, street lighting, landscaping.

The Complete Streets Policy includes procedures and design standards to ensure all new and redesigned projects include elements to address all users. Each of the following elements were considered.

Vision and Intent

- The vision of the City of Arlington Complete Streets Policy as outlined in the 2017 resolution states *“a transportation system that encourages healthy, active living; promotes transportation options and independent mobility; increases community safety and access to healthy food; reduces environmental impact; mitigates climate change; and supports greater social interaction and community identity by providing safe and convenient travel along and across streets through a comprehensive, integrated transportation network for pedestrians, bicyclists, public transportation riders and drivers, motor-vehicle drivers....”*
- The policy aims to create a complete, connected network for the following modes of traffic; pedestrians, cyclists, transit riders, and motorists. Each mode has been looked at independently and improvement plans have been drafted to

create complete, safe, equitable, integrated systems for all modes of travel.

- All projects, public or private, permitted within the City of Arlington shall utilize the Complete Streets Checklist and adhere to the Complete Streets Policy and Design Standards included within.
- This vision was used as a guide throughout the development process to ensure the final policy met the intent for all City of Arlington citizens.

Diverse users

- As outlined in the 2017 resolution the policy is intended to serve *“people of all ages and abilities, including children, youth, families, older adults, and individuals with disabilities”* Safety and gap improvements have been identified to increase accessibility for all users.
- Additionally, the policy was created to consider the needs of all people including vulnerable or underrepresented populations, by focusing on connecting all modes of transportation to diverse residential areas. The policy seeks to increase transit coverage in areas of existing and future multifamily developments, large employment centers, schools, and commercial areas. When considering public complete streets projects the City shall prioritize vulnerable users or neighborhoods historically underinvested, identified through Snohomish County census data.

Commitment in all projects and phases

- In order to ensure all projects and phases are included the City put together a team of planners, engineers, council members, maintenance staff, and administration to advise and direct the planning of the policy.
- The Complete Streets Checklist was created and will be required on all

projects to ensure consistency with the policy on all levels for all projects. This includes working with Public Works and Maintenance to ensure all city maintenance projects such as resurfacing, or restriping consider the needs of all users.

- The City has included changes to the right of way permitting procedures to ensure all users are considered when considering temporary traffic control plans.

Clear, Accountable Expectations

- The complete streets checklist details requirements, outlines variance procedures, and is a requirement of all project applications. It utilizes the existing City of Arlington variance procedure for evaluation of exceptions. The existing variance procedure requires public notification and can only be approved by the Director of Community and Economic Development based on clear and acceptable justification.
- Acceptable Justifications for Complete Streets Variances would be limited to;
 - Routine maintenance of the right of way that does not change the roadway geometry or operations, such as mowing, sweeping, and spot repair.
 - Emergency repairs that require immediate rapid response may be justifiable, however improvements should still be considered if possible. Temporary accommodations for all existing modes of travel are still required.
 - The cost of accommodation is excessively disproportionate to the need or probable use.
 - A documented absence of current and future need can be demonstrated.

- User prohibited corridors as specified by City planning documents.

Jurisdiction

- All projects, public or private, permitted within the City will be required to include the Complete Streets Checklist with the permit application in order to demonstrate adherence to the Complete Streets Policy.
- The Complete Streets Policy has been created with interagency coordination and is intended to be a tool for continued coordination with State, County, Health, Community Transit, Public Works, Planning, City Council, Administration, and housing, bicycle and pedestrian groups.

Design

- The Complete Streets Policy includes Design Standards for current best management practices. It also details design components for key complete street corridors within the City and includes typical sections commonly proposed for commercial, industrial, and residential areas.
- All new project applications received after implementation of this policy will be required to follow the proposed Design Standards.

Land Use and Context Sensitivity

- The City has implemented a set of mixed use regulations intended to work in conjunction with the Complete Streets Policy. In addition to adoption of the Design Standards within the Complete Streets Policy the City plans updates to the Engineering Design Standards and Standard Plans within the next year.
- The Policy intends to consider existing and proposed community context in design guidance and mitigate for unintended consequences such as involuntary displacement. The

Horizontal Mixed-Use Regulations are a key component of mitigation by creating economically diverse, walkable, complete, communities.

health. The same criteria will be used in evaluation of transportation projects from adoption of the policy moving forward.

Performance Measures

- Specific performance measures have been incorporated into the Policy including; pedestrian improvements, bicycle improvements, connectivity, transit improvements, vehicle metrics, health, safety, economics, and community.
- Detailed performance measures have been created and assigned to the appropriate department for near and long-term reporting. This allows review of the program and creates the ability to improve or adjust as needed to ensure the policy continues to meet the intent and vision as stated above.
- The Policy shall include evaluation of equity measures by reporting and comparing improvements within identified target areas to improvements within other areas of the City.
- Near-term measures will be collected annually, long-term measures are to be collected every six years. Community and Economic Development will be responsible for collecting data from the appropriate departments and creating annual reports. Performance measures shall be published annually and made available to the public on the City website.

Project Selection Criteria

- Through the process of creating the Complete Streets Policy, the City has identified a significant number of Complete Streets projects aimed at increasing connectivity within our communities. The Policy has also established criteria for prioritization of projects which include safety, equity, cost effectiveness, connectivity, and

Implementation Steps

- Prior to development of the Complete Streets Policy the Horizontal Mixed-Use Regulations were adopted to create communities complementary to Complete Streets.
- The Policy includes immediate changes to permitting policy including implementation of the Complete Streets Checklist and updating the Right of Way procedures for specific measures to accommodate all users.
- Engineering Design Standards and Standard Plans will be updated within the next year.
- Annual reporting will be required in conjunction with staff training and updates as necessary to ensure the plan remains up to date and aligned with the Complete Streets goals.
- The existing Complete Streets advisory committee, under the direction of Community and Economic Development, is to remain engaged and responsible for reporting, training, and updating the Complete Streets Policy. Representation includes, City Administration, Community and Economic Development, city council, design review, public works, GIS, planners, engineers, and maintenance staff.
- The Complete Streets advisory committee will be responsible for providing updated information to the City’s Communications Department to keep the website up to date with new information, community input, and public outreach.

1.2.2 Complete Streets Design Standards

The standards outlined in the Complete Streets Policy (this document) are intended to facilitate the design and construction of a street network that better accommodates all transportation modes and users in the city. This document provides standards for street and right-of-way features that affect user safety, speed, and comfort. The design standards are discussed in Chapter 3.

The combination of street design parameters (number of travel lanes, lane widths, medians, on-street parking, and bikeways) with pedestrian zone parameters (building setback, sidewalk width, pedestrian clear space, landscape buffers, and street furnishings) will result in a safer transportation network for all users.

1.2.3 Complete Streets Implementation

The Complete Street Policy and this Plan apply to all public and private street design, construction, and retrofit projects managed and implemented by the City of Arlington initiated after this Plan's adoption, except in unusual or extraordinary circumstances. Following the City's adoption of this Plan, all street and right-of-way projects will refer to the process, design standards outlined in Chapter 3 of this document to the extent feasible.

The Policy includes required use of The Complete Streets Checklist for all permitted projects within the City. The Checklist walks project managers through the steps required to ensure the project addresses all users for each mode of transportation. Key to the checklist is the supporting planning documents contained within.

1.2.4 Program Evaluation Metrics

Arlington's Complete Streets Policy requires the development of connectivity-focused metrics across all modes of transportation. The

Resolution specifically calls out pedestrian, bicycle, transit, and auto connectivity as starting points for Complete Streets metrics. In addition to the connectivity-focused metrics required by the Policy, this Plan recommends that the City establish near-term input activity-based performance measures. The performance measures can be used to track the City's implementation of the Complete Streets Policy and this Plan, and progress towards the Policy-required multimodal connectivity metrics. The near-term performance measures should be connected to and updated based on future updates to the Complete Streets Policy, and funding and staffing resource levels.

Performance measures and metrics should be easy and inexpensive to collect and calculate and guide the City's progress towards achieving the Complete Streets Policy's vision. Prior to committing to the below recommended performance measures and metrics, the City should determine what data is readily available or can easily be collected. In addition to data the City already collects, the City will likely need to use data collected by other agencies, such as the U.S. Census, Community Transit, and the County and State Departments of Transportation.

Near-term Performance Measures

Near-term performance measures are used to track and measure the City's actions and Complete Streets investments. They should be tracked and reported on an annual basis. The annual report should be presented to the City Council and posted on the City's Complete Streets webpage.

- Miles of new and improved sidewalks
- Miles of new and improved bicycle facilities
- Number of new and improved accessible transit stops (required by the Complete Streets Policy)
- Number of and percentage of projects granted exceptions from the Complete Streets Policy

- Number of new and improved intersection pedestrian crosswalks
- Number of new and improved mid-block pedestrian crossings

Over time, the City should provide annual and six-year targets for these input measures. The annual and six-year targets should be in alignment with the City’s annual budget and Six Year Transportation Improvement Plan.

Long-term Connectivity Metrics

While near-term performance measures are related to project delivery and workloads, long-term Connectivity Metrics measure changes in the network’s performance and in the community’s behavior. The following long-term connectivity metrics should be tracked and reported on every six years following the adoption of this Plan. The report should be presented to the City Council and posted on the City’s Complete Streets webpage following its development.

The six-year timeline was proposed to align the City’s six-year TIP schedule. A longer time frame (18 or 30 years, or another 6-year mark) may be better for achieving a significant mode shift.

Pedestrian Metrics

- Pedestrian Connectivity
- Walking commute mode share
- Six-year change in walking commute mode share

Bicycle Metrics

- Bicycling Connectivity
- Bicycling commute mode share
- Six-year change in bicycling commute mode share

Transit Metrics

- Transit Connectivity
- Transit commute mode share
- Six-year change in transit commute mode share
- Number of bus boardings in Arlington

- Six-year change in bus boardings in Arlington

Vehicle Metrics

- Vehicular Connectivity
- SOV commute mode share
- Six-year change in SOV commute mode share

Community Metrics

- Community Connectivity
- Mean travel time to work
- Six-year change in the mean travel time to work
- Percentage of workers with commutes 30, 60 minutes or greater
- Six-year percentage change in the percentage of workers with commutes 30, 60 minutes or greater

Economic Metrics

- Commercial vacancy rate
- Six-year percentage change of commercial use vacancy rate

Community Health Metrics

- Six-year percentage change of adults who participate in 30 minutes of moderate physical activity per day, five days a week
- Six-year percentage change of youth who participate in 30 minutes of moderate physical activity per day, five days a week

Safety Metrics

- Average annual reported traffic fatalities and serious injuries (all modes)
- Six-year change in average annual reported traffic fatalities and serious injuries (all modes)
- Average annual reported pedestrian and bicyclist fatalities and serious injuries
- Six-year change in average annual reported pedestrian and bicyclist fatalities and serious injuries

The target goals should be established for the long-term connectivity metrics based off initial data for the near-term metrics, and available funding for planning, project development, and maintenance and operation activities. The long-term connectivity metrics' goals should be updated every six years in alignment with the City's Six Year Transportation Improvement Plan.

1.2.5 Ongoing program Oversight and Reporting

Implementing the Complete Streets policy and developing the Complete Streets Policy will require significant coordination between the Community and Economic Development, Public Works, and Maintenance and Operations departments. Other departments and key staff members will also need to be integrated into the planning, operation, and maintenance decision-making processes. For example, the Airport Department, Community Revitalization Project Manager, Finance Department, Police Department, and Fire Department all play important roles in managing the City's built environment and transportation network.

From the launch of this Plan's development, the needs and viewpoints of multiple departments were recognized and considered through the work on an internal Complete Streets Advisory Committee of elected and appointed officials, and City Staff members who represent multiple departments and teams. The Complete Streets Advisory Committee met monthly to review and provide feedback on the Plan's development and project deliverables. The Complete Streets Advisory Committee should continue to serve as the Policy's oversight body following the Plan's adoption. In this updated role, the Complete

Streets Advisory Committee should focus on integrating this Plan's primary products, the Complete Streets Checklist and Streets Design Framework, into the departments' project development processes. The Complete Street Advisory Committee should also establish annual reporting and training standards. Reporting shall include updates on performance measures, changes needed to improve the Policy and maintain current on best available science and design standards. Results will be shared with the community on the City's website, with staff, and with the City Council.

1.3 Complete Streets Background

1.3.1 Safety Benefits of Complete Streets

According to the U.S. Department of Transportation, bicyclist and pedestrian injuries and fatalities have "steadily increased" since 2009, "at a rate higher than motor vehicle fatalities."² Nationwide, pedestrian and bicyclist fatalities have not only increased overall, but also as a share of all fatalities. For example, pedestrian fatalities increased by 25 percent from 2010 to 2015, while traffic fatalities overall increased only 6 percent.³ The causes underlying this increase are not well understood, but are likely due to a combination of factors including sociodemographic changes (the shift in physical and cognitive abilities of particular generations, such as the baby boomers, as they age), increased exposure (i.e., more people walking and driving), unsafe walking and bicycling environments, and unsafe behaviors such as impaired or distracted driving, bicycling and walking.

² U.S. Department of Transportation. "U.S. Transportation Secretary Foxx Announces New Initiative to Enhance Pedestrian and Bicycle Safety." U.S. Department of Transportation, September 10, 2014. <https://www.transportation.gov/briefing->

[room/us-transportation-secretary-foxx-announces-new-initiative-enhance-pedestrian-and-bicycle-safety](https://www.transportation.gov/briefing-room/us-transportation-secretary-foxx-announces-new-initiative-enhance-pedestrian-and-bicycle-safety)

³ Governors Highway Safety Association. "Pedestrian Traffic Fatalities by State." N.d. https://www.ghsa.org/sites/default/files/2017-03/2017ped_FINAL_4.pdf



Figure 3. Biking in Arlington

In recent years, considerable progress has been made in identifying effective approaches for reducing crash risk for pedestrians and bicyclists.^{4,5} Research has also shown that planning for and implementing facilities to increase the safety of people who bicycle and walk will improve safety for drivers and transit users.⁶ Additionally, motorists feel more comfortable driving when bicyclists have a defined space on a road, compared to scenarios where they share space with bicyclists.⁷ These studies show how planning for people who walk or bike benefits all users, especially those with the greatest risk of suffering an injury or fatality when involved in a crash.

Roadway safety improvement will benefit not only those out on the road, but also first responders and the community. Arlington's Police Department has experienced an 18 percent increase in the total number of service calls received from 2012 to 2016. Arlington's

⁴ Federal Highway Administration. "Pedestrian Safety Guide and Countermeasure Selection System (PEDSAFE)."

⁵ Federal Highway Administration. "Bicycle Safety Guide and Countermeasure Selection System (BIKESAFE)."

⁶ Wesley Marshall and Norman Garrick. Evidence on Why Bicycle-Friendly Cities Are Safer for All Road Users, *Environmental Practice* 13, no. 1, 2011, p. 16–27.

⁷ Rebecca Sanders. "Roadway Design Preferences Among Drivers and Bicyclists in the Bay Area." 93rd Annual Meeting of the Transportation Research Board, Washington, D.C, 2014.

Fire Department saw a 10 percent increase in the number of incident calls received from 2015 to 2017. Reducing the number of traffic crashes in Arlington will improve the Police Department's and the Fire Department's ability to respond to other emergencies within the community and to meet the Departments' response time goals.^{8,9}

1.3.2 Economic Benefits of Complete Streets

Smart Growth America has found that Complete Streets projects have helped communities realize several economic benefits. The *Safer Streets, Stronger Economies* 2015 report analyzed data from 37 Complete Streets projects in the United States and found the following economic benefits¹⁰:

- Increased economic development: the study found that more people were employed along Complete Streets projects after a project was completed than before. Additionally, these projects found an increase in new businesses, higher property values, and an increase in private investment
- Increased multimodal travel: for nearly all Complete Streets projects there was a resulting increase in biking, walking and transit trips. These modes themselves have proven economic benefits in offsetting health costs, increased consumer spending,

⁸ Arlington Police Department, *Annual Report 2016*. 2016.

<https://www.arlingtonwa.gov/ArchiveCenter/ViewFile/Item/80>,

⁹ Arlington Fire Department, *Annual Report of Service Level Objectives (RCW 52.33.020)*. 2017. <https://www.arlingtonwa.gov/DocumentCenter/View/1205/Arlington-Fire-Department-Annual-Report-of-Service-Level-Objectives-2017>,

¹⁰ Smart Growth America, "Safer Streets, Stronger Economies." March 2015.

smartgrowthamerica.org/resources/evaluating-complete-streets-projects-a-guide-for-practitioners/

property values, and lower individual transportation costs.¹¹

- Lower project costs: 74 percent of projects cost less than an average normal-cost arterial and 97% cost less per mile than construction of an average high-cost arterial.
- Lower crash-related costs: 70percent of projects saw a reduction in the number of collisions and 56% of projects experienced a reduction in injuries after their Complete Streets improvements. These improvements collectively averted \$18.1 million in total collision costs in one year.

Complete Streets improvements will enhance the way that Arlington community members see and experience their neighborhoods and connect neighborhoods across the City.

1.3.3 Accessibility and Mobility Benefits of Complete Streets

Active transportation options contribute to a more equitable transportation system by reducing accessibility barriers for people who do not have access to a vehicle or do not drive, by providing healthier travel options for all, and by shifting trip modes and reducing roadway congestion. While nine percent of American households did not own or have access to a vehicle in 2016, only 2.1 percent of Arlington households reported not having a vehicle.^{12, 13, 14}

While some people choose to live without a car, others do not have a choice due to age, financial reasons, physical or mental conditions that

prevent them from driving. Furthermore, as the population ages, the need for safe and accessible alternatives to driving will increase. Older adults who no longer feel safe driving, or do not have the physical or financial ability to drive, should not be limited from performing their daily activities. Like everyone else, people without a car have jobs, attend school, go grocery shopping, and need to get around to perform a variety of other functions to fully participate in society. As a result, transit, walking, and bicycling fill an important role in the overall transportation system by offering mobility options for people without cars. Improvements for these modes offer significant benefits. Bicycling is an affordable and convenient means of transportation for people who do not drive but is largely underutilized.

Arlington residents take more single occupancy vehicle (SOV) trips to work and have longer commutes than the average Washington state



Figure 4. Walking in Arlington
worker. In 2016, 83.5 percent of Arlington’s

Their Own Vehicle.” 2014. <http://www.umtri.umich.edu/what-were-doing/news/hitchin-ride-fewer-americans-have-their-own-vehicle>.

¹⁴ U.S. Census Bureau. 2012-2016 American Community Survey, “Means of Transportation to Work by Selected Characteristics.” https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS_16_5YR_S0802&prodType=table.

¹¹ Vibrant Northeast Ohio Sustainable Communities Consortium Initiative, “Vibrant NEO 2040.” February 2014. Pg. 149-151. vibrantneo.org/wp-content/uploads/2014/03/VibrantNEO_EconomicBenefitsofCompleteStreets.pdf

¹² Governing the States and Localities. “Car Ownership in U.S. Cities Data and Map.” N.d., Accessed January 30, 2018. <http://www.governing.com/gov-data/car-ownership-numbers-of-vehicles-by-city-map.html>

¹³ University of Michigan Transportation Research Institute. “Hitchin’ a Ride: Fewer Americans Have

residents drove to work alone. Arlington's SOV mode share is higher than that for Snohomish County, 75 percent, and Washington State's, 72.3 percent. In addition to having a significantly higher SOV mode share, Arlington resident's mean travel time to work, 30.5 minutes, is greater than the statewide average of 26.7 minutes. In Arlington, 48.5 percent of residents' commute for 30 minutes or more to work, while only 38.1 percent of workers statewide commute for 30 minutes or more to work. Almost 14 percent of Arlington's residents commute 60 minutes or more to work.

The costs of long commutes are significant on not only the individual work's mental and physical health, but also on their families and communities as they have less time to socialize and participate in family and community life. Longer commutes are associated with higher blood pressure, greater body mass index, and lower levels of physical activity.¹⁵ In fact, a 2004 study found that each additional hour daily hour spent in a car is associated with a 6 percent increase in the likelihood of obesity.¹⁶

1.3.4 Health Benefits of Complete Streets

Americans suffer 1.5 million heart attacks and strokes each year, both of which can be caused by the leading cause of death, heart disease.¹⁷ This staggering number contributes to \$320 billion in annual healthcare costs and lost productivity caused by cardiovascular disease. These numbers are expected to rise to more than \$818 billion in medical costs and \$275 billion in lost productivity by 2030. Heart disease is the second leading cause of death in Snohomish County (154.6 per 100,00 deaths).¹⁸

Individuals who have obesity are at a higher risk of suffering from cardiovascular diseases, high blood pressure, diabetes, strokes, clinical depression, and other chronic diseases.^{19, 20} Obesity is caused by a variety of factors including dietary patterns, activity levels, medications, and genetics.²¹ In 2017, 29 percent of adults were self-reported as obese, and 11 percent of youth were diagnosed with obesity in 2013 within Snohomish County. The county's obesity rate is higher than Washington's statewide average of 27 percent.²² The county's adult obesity rate doubles between 1994 and

¹⁵ Hoehner, Christine M., et al. "Commuting distance, cardiorespiratory fitness, and metabolic risk." *American journal of preventive medicine* 42.6 (2012): 571-578.

¹⁶ Frank, Lawrence D., Martin A. Andresen, and Thomas L. Schmid. "Obesity relationships with community design, physical activity, and time spent in cars." *American journal of preventive medicine* 27.2 (2004): 87-96.

¹⁷ Center for Disease Control and Prevention Foundation. "Heart Disease and Stroke Cost America Nearly \$1 Billion a Day in Medical Costs, Lost Productivity." 2015.

<https://www.cdcfoundation.org/pr/2015/heart-disease-and-stroke-cost-america-nearly-1-billion-day-medical-costs-lost-productivity>

¹⁸ Snohomish Health District, *The Health of Snohomish County: Community Report Card*. 2013. <http://www.snohd.org/Portals/0/Snohd/Living/files/AssessmentResultsFINAL8x11.pdf>.

¹⁹ U.S. Department of Health and Human Services, *Managing Overweight and Obesity in Adults*. 2013. <https://www.nhlbi.nih.gov/sites/default/files/media/docs/obesity-evidence-review.pdf>.

²⁰ National Institutes of Health, *Clinical Guidelines on the Identification, Evaluation, and Treatment of Overweight and Obesity in Adults: The Evidence Report*. 1998. https://www.nhlbi.nih.gov/files/docs/guidelines/ob_gdlns.pdf.

²¹ Centers for Disease Control and Prevention, "Overweight & Obesity: Adult Obesity Causes & Consequences." Accessed 07/13/2018. <https://www.cdc.gov/obesity/adult/causes.html>.

²² Robert Wood Johnson Foundation, "County Health Rankings & Reports," Accessed 07/13/2018. <http://www.countyhealthrankings.org/app/colorado/2017/measure/factors/70/data>.

2010, and the youth obesity rate increase 18 percent between 2002 and 2010.²³

Physical inactivity is an important risk factor for heart disease and obesity. While the Centers for Disease Control and Prevention recommends a minimum of 30 minutes of moderate physical activity per day, five days a week, 50 percent of Snohomish County adults and 77 percent of youth did not meet this minimum in 2010.^{24, 25} In Snohomish County, 18 percent of adults in 2017 reported not participating in any leisure-time forms of physical activity, such as walking, jogging, or bicycling for recreational purposes.^{26, 27}

1.3.5 Environmental Benefits of Complete Streets

Transportation is responsible for 27 percent of greenhouse gas emissions in the U.S and contributes to respiratory complications, such as asthma.²⁸ A study completed by the University of Southern California, found that at least eight percent of 300,000 cases of childhood asthma in Los Angeles County can be attributed to homes within 250 feet of a major roadway.²⁹

Snohomish County had a 9.1 average daily density of fine particulate matter in micrograms per cubic meter (PM2.5) in 2017. In comparison,



Washington **Figure 5. Walking in Arlington** state had a 7.0

average daily PM 2.5 density in 2017.³⁰ Elevated pollution levels can negatively impact older adults, children, and those with asthma. In 2017, over 13,000 youth and 59,000 adults were diagnosed with asthma.³¹ Shifting trips from motor vehicles to active modes would reduce air pollution and associated health impacts, benefitting disadvantaged communities as a result.

²³ Snohomish Health District, *The Health of Snohomish County: Community Report Card*. 2013. <http://www.snohd.org/Portals/0/Snohd/Living/files/AssessmentResultsFINAL8x11.pdf>.

²⁴ The State of Obesity. “Physical Inactivity in the United States.” N.d., Accessed 01/30/2018. <https://stateofobesity.org/physical-inactivity/>

²⁵ Snohomish Health District, *The Health of Snohomish County: Community Report Card*. 2013. <http://www.snohd.org/Portals/0/Snohd/Living/files/AssessmentResultsFINAL8x11.pdf>.

²⁶ Robert Wood Johnson Foundation, “County Health Rankings & Reports,” Accessed 07/13/2018. <http://www.countyhealthrankings.org/app/colorado/2017/measure/factors/70/data>

²⁷ In 2017, 17 percent of adults in Washington State did not participate in any leisure-time physical activities.

²⁸ U.S. Environmental Protection Agency. “Help Make Transportation Greener, Overviews and Factsheets.” US EPA, September 24, 2015. <https://www.epa.gov/greenvehicles/help-make-transportation-greener>

²⁹ Scientific American. “Breathe Wheezy: Traffic Pollution Not Only Worsens Asthma, but May Cause It.” *Scientific American*, n.d., <https://www.scientificamerican.com/article/traffic-pollution-and-asthma/>

³⁰ Robert Wood Johnson Foundation, “County Health Rankings & Reports,” Accessed 07/13/2018. <http://www.countyhealthrankings.org/app/colorado/2017/measure/factors/70/data>.

³¹ American Lung Association, “State of the Air.” Accessed 07/13/2018. <http://www.lung.org/our-initiatives/healthy-air/sota/city-rankings/states/washington/snohomish.html>.

1.3.6 Economic and Equity Considerations

Based on census data it is possible to identify the location of underserved populations in the Arlington area, in order to show where Complete Streets projects could provide a larger benefit to the residents.

In an effort to work towards transportation equity for underserved populations we have examined census data for the city based on income, poverty, and race. The City will utilize this information when prioritizing projects. Giving higher priority to projects in areas of lower income or higher concentrations of underserved populations. Based on the information the following areas should be looked at as priority areas:

Smokey Point

- East of Stillaguamish Ave
- Neighborhoods around the Arlington Airport
- Old Town near SR530
- Kent-Prairie Neighborhood

See 2016 census summary maps below, Figures 5-10, for supporting documentation.

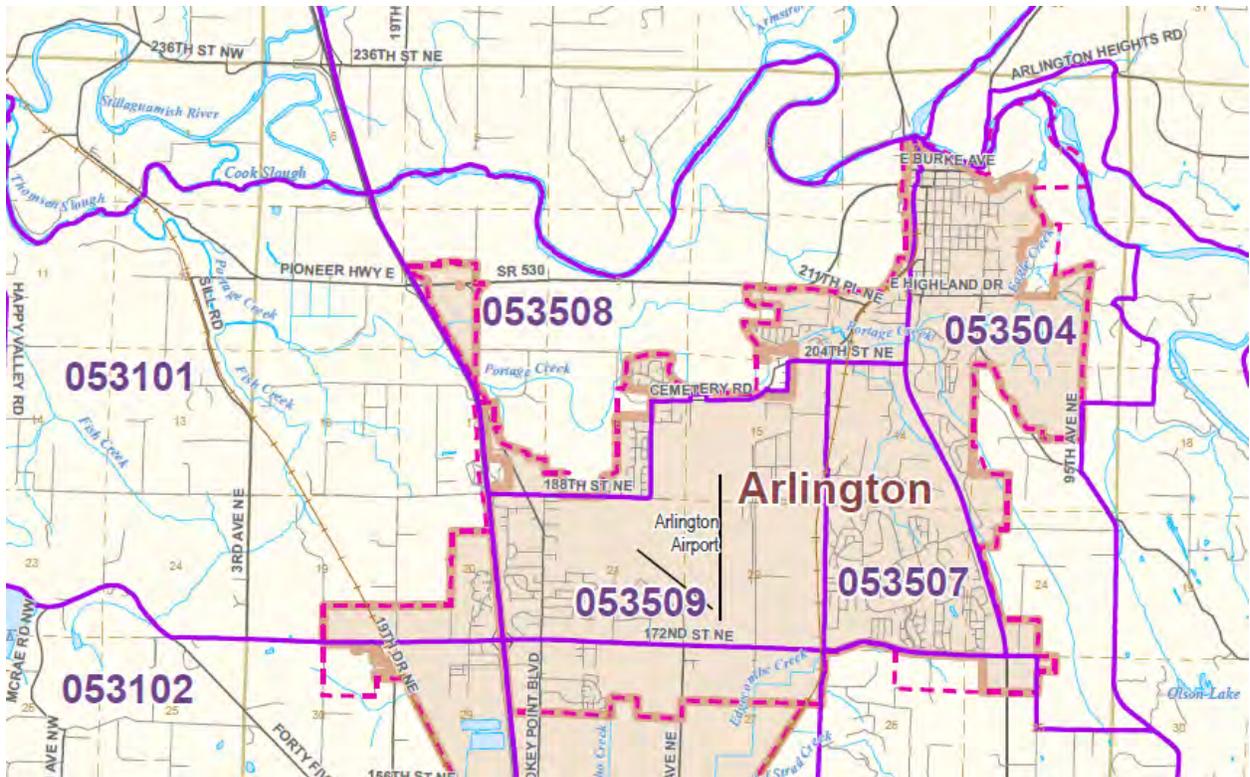


Figure 6. Census Tracts – 2010. Source: Snohomish County

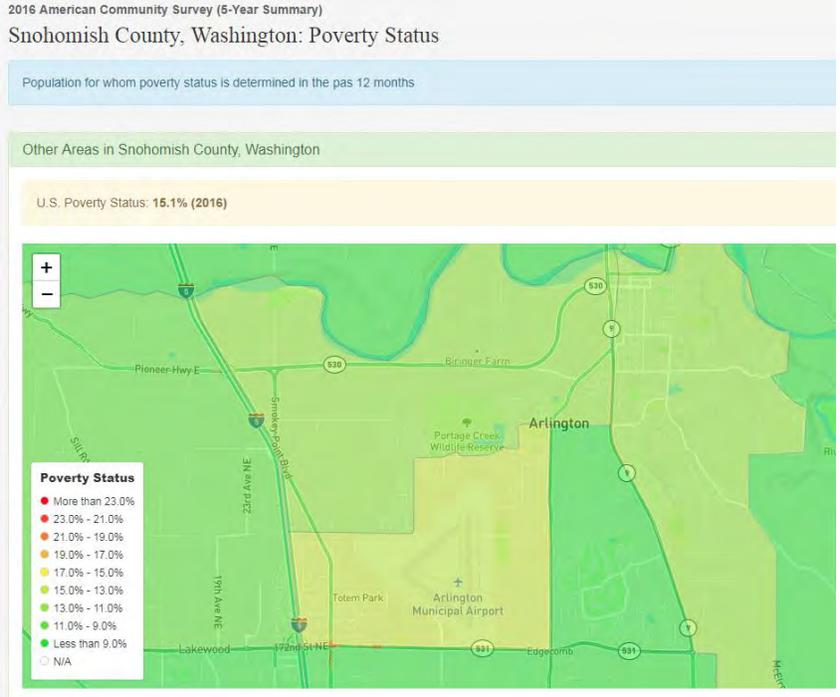


Figure 7. Poverty status, Arlington

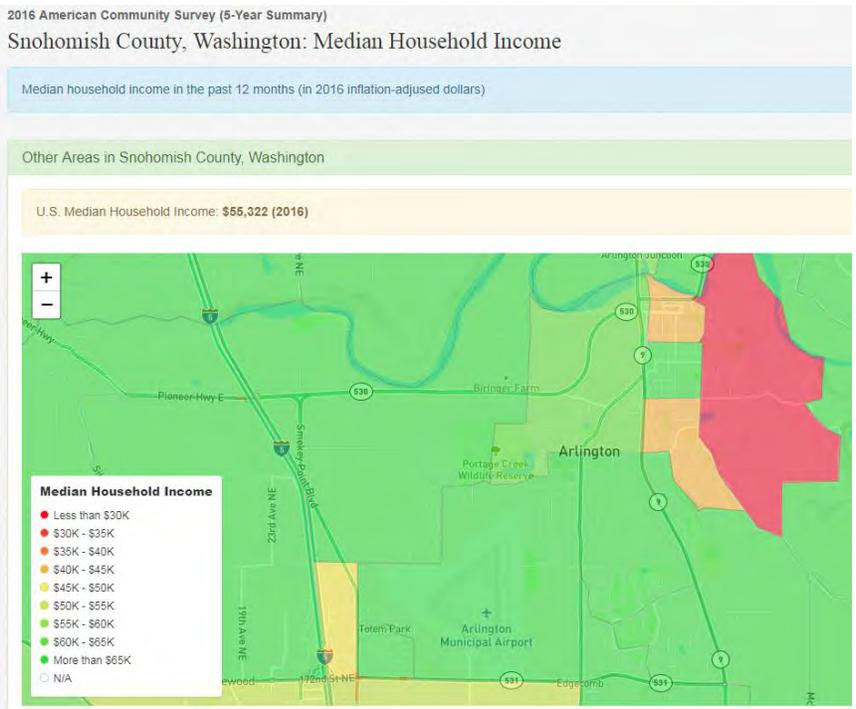


Figure 8. Median Household Income, Arlington

Figure: 9 Diverse Populations

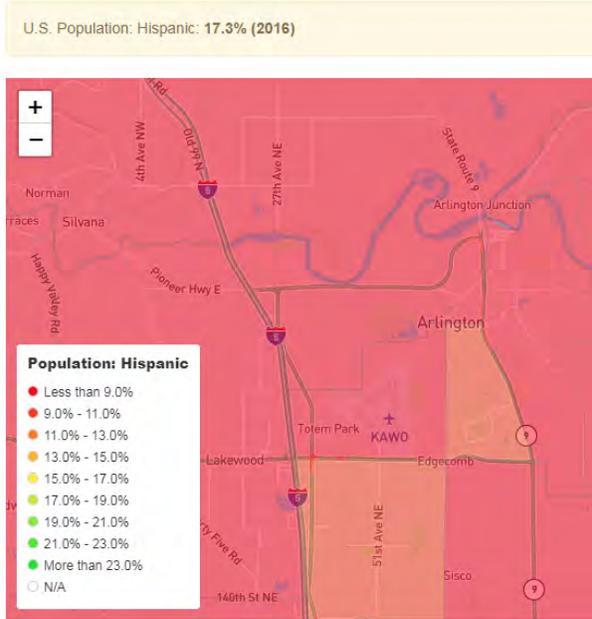


Figure: 9.1 Hispanic Population

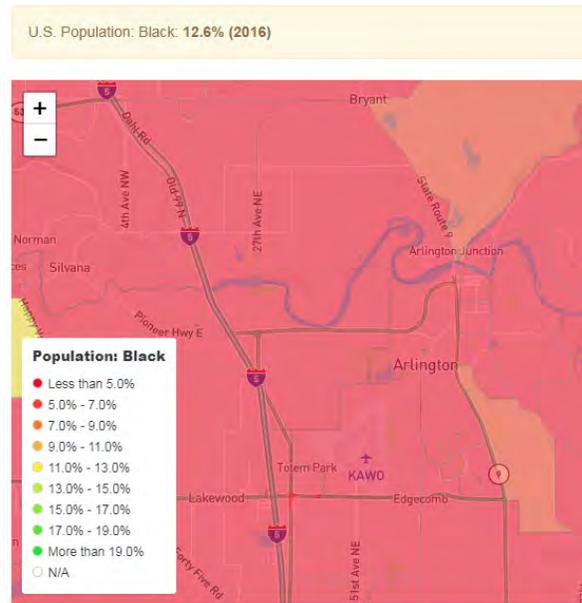


Figure: 9.2 Black Population

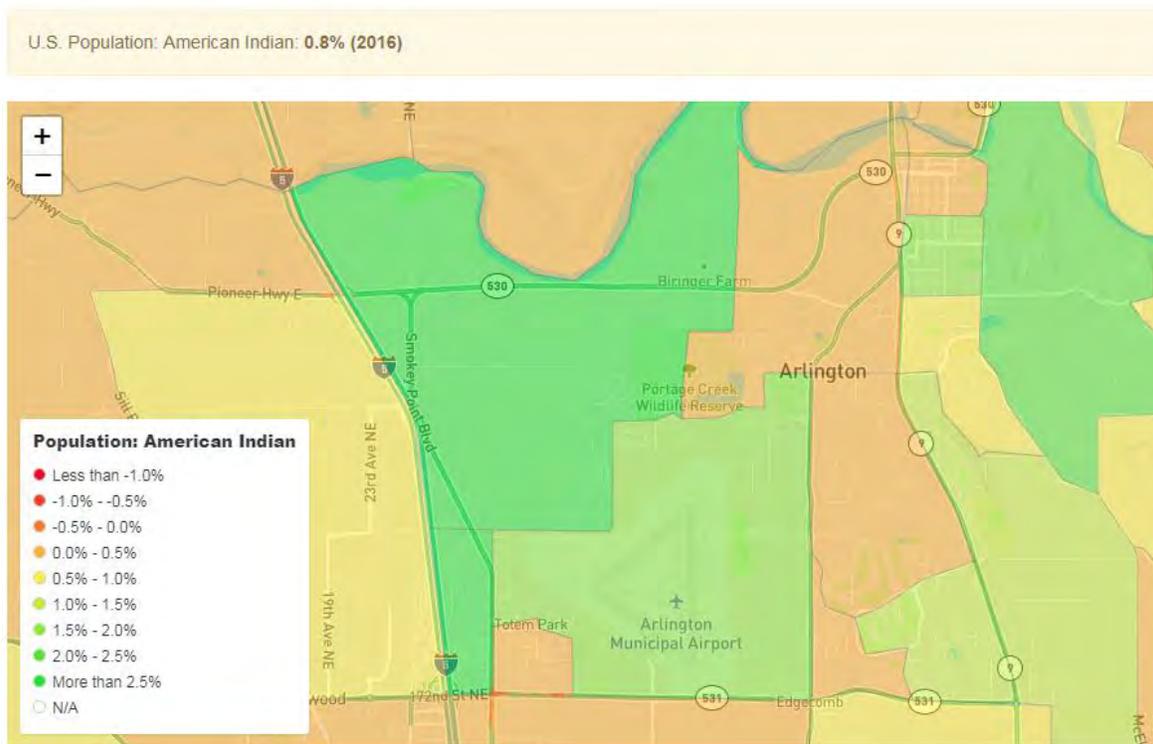


Figure: 9.3 American Indian Population

Poverty Status

Based on Figure 6-7, the City of Arlington the population is generally above the national average for poverty. The areas that have the largest concentration of poverty within city limits are the Smokey Point and Arlington Airport areas.³²

Median Household Income

Within the City of Arlington median household income is \$66,615, which is higher than the national median of \$55,322. Based on the map above there are areas of income below national averages that should be considered in prioritization. The area east of Stillaguamish Ave is the lowest within city limits, followed by the Old Town neighborhood near SR 530, the Kent-Prairie neighborhood, and Smokey Point west of Smokey Point Boulevard.

Hispanic Population

Based Figure 9.1, the City does not have an area of Hispanic population significantly above the US Hispanic population of 17.3%. There is no recommendation of prioritization based on this information.

Black Population

Based Figure 9.2, the City does not have an area of black population significantly above the US black population of 12.6%. There is no recommendation of prioritization based on this information.

³² Source:

<https://data.thetimesherald.com/american-community-survey/snohomish-county-washington/poverty-status/population/num/05000US53061/>

American Indian Population

The City is home to a larger percentage of American Indians than the US average population. Based on Figure 9.3, there are neighborhoods that should be considered in prioritization. The area east of Stillaguamish Ave and Smokey Point have the highest populations of American Indian households.

1.4 Case Studies

A detailed review of Complete Streets policies and plans from 13 communities was conducted to inform the recommendations of the Plan. The communities were selected from Washington State's Transportation Improvement Board (TIB) Complete Streets Award eligibility list,³³ and the National Complete Streets Coalition's (NCSC) Complete Streets Policy atlas.³⁴ The case study includes both Arlington's neighbors and regional communities, and peer-cities from across the country. In identifying peer-cities for this evaluation, only communities of a similar population, with a prominent municipal airport, and located approximately one hour away from a large employment center (such as the City of Seattle) were considered.

A list of the case study communities and summaries of the communities' Complete Streets policies and plans are provided in Appendix J. The case studies are organized based on their location, with Washington locations listed first, and then by 2016 population size. The format of each individual case study includes:

- Structure of the policy, plan, or design guideline
- Implementation elements

³³ TIB Complete Streets Funding Award webpage: www.tib.wa.gov/grants/completestreets/completestreets.cfm. Accessed on 02-19-2018.

³⁴ NCSC Complete Streets Policy Atlas: www.smartgrowthamerica.org/program/national-complete-streets-coalition/policy-development/policy-atlas/. Accessed on 02-19-2018.

- Funding and implementation details post-adoption: this section’s depth is correlated to the amount of time since the policy’s, plan’s or design standards’ adoption, the local political will, and available resource levels
- Links to the policy, plan, or design guideline

1.4.1 Policy Evaluation Criteria

The case studies’ Complete Street policies were evaluated using the National Complete Streets Coalition/Smart Growth America’s (NCSC) Elements of a Complete Streets Policy scores. Each year, the NCSC scores and ranks Complete Streets policies adopted during the previous calendar year. The Elements of a Complete Streets Policy score considers both the policy’s completeness (does it include all elements of an ideal policy), and the quality of its language (is the language strong and clear, with limited exceptions). NCSC Elements of a Complete Streets Policy scores from local and national case study communities are included in Appendix J.^{35, 36}

The NCSC criteria are an important tool to refer to when developing Complete Street policies and planning documents, as the framework is used for the Washington State Complete Streets grant program, as discussed below in the Funding Opportunities section. In January 2018, the NCSC’s criteria were substantially revised to place a greater emphasis on implementation and equity. The 2018 criteria will be considered when developing recommendations for Arlington’s program, but are not cited in the below case study communities as these policies and planning documents were adopted prior to the 2018 NCSC criteria’s release.

³⁵ NCSC scores are not currently available for policies adopted after December 2016.

³⁶ NCSC does not provide scores for Complete Streets plans, or design guidelines and manuals.

³⁷ The Region’s TIP is submitted by PSRC to the State, and then to the U.S. Department of Transportation for funding approval. The TIP is

The City of Arlington has included all ten elements recommended in the 2018 criteria.

A full discussion of the Complete Streets Best Practices and Peer Cities review is provided in Appendix J.

1.5 Funding Opportunities

Through a strong Complete Street Plan, the City of Arlington can leverage local, regional, and state funding opportunities to stretch transportation project budgets, and work towards building out a comprehensive and integrated transportation network.

As discussed in Section 2, the Complete Street legislation adopted by the State of Washington incentivizes cities to adopt Complete Street policies to be eligible for state grants related to Complete Streets projects. In addition, the Puget Sound Regional Council (PSRC) distributes grant funds and recommends projects for the region’s biannual Transportation Improvement Program (TIP).³⁷ The TIP grant criteria prioritizes applications that improve walkability, bicycle mobility, and access to public transit.³⁸ With a Complete Streets Policy, the City of Arlington can leverage its local resources to be eligible for these and other funding opportunities that can stretch local dollars further, and achieve greater investments for balanced and safer streets, as several of its Washington state peer cities have.

Local Funding Opportunities

In April 2013, City Council established a Transportation Benefit District (TBD). The TBD serves as a quasi-municipal corporation and independent taxing district that raises funds

developed every two years, with updates occurring on an annual basis.

³⁸ Puget Sound Regional Council, “2018 Regional project Evaluation Criteria for PSRC’s FHWA Funds.”

https://www.psrc.org/sites/default/files/rpecriteria2018regional_fhwa_project_evaluation_criteria.pdf.

Accessed: 03/06/2018.

(through taxes and fees) for pavement preservation transportation projects within the City’s boundaries. The TBD’s 2018 workplan includes programming for \$1,316,500 in pavement preservation work. While the current TBD statute does not include infrastructure for pedestrians or bicyclists, the ongoing pavement preservation work is making important updates to the roadway system, such 59th Ave NE and E 5th St. Additionally, it can be used in combination with other local funds to implement multimodal improvements. The current TBD will expire in 2023 and a subsequent TDB can be structured to consider future multimodal infrastructure investments to fund identified needs.

Regional Funding Opportunities

PSRC, as the Region’s Metropolitan Planning Organization, delivers several transportation programs and administers state and federal transportation funds at the regional level. Additionally, the region’s TIP is used to inform the state level TIP and project eligibility for state-level grant programs. The strengthening of the City’s Policy through an adopted Complete Streets Policy can help to increase the City’s competitiveness for these regional programs, which include:

- Federal Highway Administration (FHWA) Funds: The Surface Transportation Program Block Grant Program (STP), and the Congestion Mitigation and Air Quality Improvement Program (CMAQ)
- PSRC sets aside 10 percent of the combined STP and CMAQ funds for bicycle and pedestrian priority projects.
- PSRC’s project eligibility criteria includes how projects support safety, mobility and accessible; what populations are served and the project’s

impact on health and equity; and, how the project impacts emissions.³⁹

- Regional Transportation Improvement Program (TIP)
- TIP Projects must be consistent with the VISION 2040, PSRC’s Regional Transportation Plan, and local comprehensive plans.

State Funding Opportunities

The Complete Streets Act (House Bill 1071) establishes policies for consideration of context sensitive design and Complete Streets principles for Urban Main Streets and all state highways that run through incorporated towns or cities in Washington. The Act requires that the Washington State Department of Transportation (WSDOT) must consider the needs of all road users in its design and establishes a process for consultation with the local jurisdiction and the public to inform the design.

The Act also establishes a grant program for local governments with the purpose of encouraging local governments to adopt Complete Streets ordinances and to encourage projects incorporating Complete Streets

³⁹ Puget Sound Regional Council, “Call for Projects for PSRC Federal Transportation Funds” 03/04/2018. [https://www.psrc.org/whats-happening/blog/call-](https://www.psrc.org/whats-happening/blog/call-projects-psrc-federal-transportation-funds)

[projects-psrc-federal-transportation-funds](https://www.psrc.org/whats-happening/blog/call-projects-psrc-federal-transportation-funds). Accessed: 03/06/2018.

-
- Comprehensive plan/complete streets integration
 - Strategic plan/complete streets integration
 - Specific modal plans for freight, bicycles and pedestrian
 - ADA transition plan adoption
 - Community engagement regarding design for all users
 - Performance data and statistics about users
 - Operational preparedness for all users and all modes
 - Maintenance
 - Sweeping
 - Striping
 - Landscape management
 - Staff training in complete streets design
 - Standards that allow responsiveness to users
 - Budget prioritization of complete streets elements
 - Evidence of past implementation
 - Clearly apparent integration of complete streets elements
 - History of compliant projects
 - Multimodal level of service standards
 - History of actively implementing modal plans
 - Presence of programs and enforcement of modal access
 - Controlling traffic and speed
 - Pedestrian scale lighting

Figure 10. The TIB Indicators of a Well-Integrated Complete Streets Ethic (from the TIB)

principles. The Act sets out the criteria for “eligible projects,” which include local government streets or state highways that “provide street access with all users in mind, including pedestrians, bicyclists, and public transportation users”. It also establishes that eligible local governments must have adopted a “jurisdiction-wide complete streets ordinance. The state’s adoption of a Complete Streets Policy has resulted in an updated Complete Streets approach in WSDOT’s roadway design manual and its programs including Safe Routes to School⁴⁰ and the Bicycle and Pedestrian⁴¹ programs. The TIB’s Complete Streets grant program awards grants to cities and counties with established Complete Streets policies and a proven track-record of planning and implementing projects using a Complete Streets approach, based on the following:

- A city or county is eligible for the grant if it has adopted a Complete Streets ordinance and does not have an active Complete Streets Award (and they must be nominated by one of the established nominating partners).

- Funding criteria include a strong Complete Streets Policy, integration into the Comprehensive Plan, recently completed Complete Streets projects, planned projects, and community outreach on street design.
- The TIB looks for integration of Complete Streets thinking beyond a one-time policy adoption; specifically, for “achievement[s] in planning, designing, building and involving the community in design[ing] for all users.”⁴²
- The TIB considers staff training, performance data, and adopted ADA training plan as local indicators of a “well-integrated Complete Streets ethic.” A full list of the TIB’s recognized indicators is included below in Figure 6.43
- Award levels include \$125,000 for cities early in the Complete Streets adoption process and \$500,000 for cities and counties with an established Complete Streets program.⁴⁴
- A call for nominations for the second round of funding will be issued in 2018

⁴⁰ Washington State Department of Transportation, “Safe Routes to School.” www.wsdot.wa.gov/LocalPrograms/SafeRoutes/. Accessed 02-21-2018.

⁴¹ Washington State Department of Transportation, “Pedestrian and Bicycle Program Funding.” www.wsdot.wa.gov/LocalPrograms/ATP/funding.htm. Accessed 02-21-2018.

⁴² Complete Streets Award Program, Washington State Transportation Improvement Board. 05-20-2016.

<http://www.tib.wa.gov/grants/completestreets/CompleteStreetsFramework.pdf>. Accessed 02-21-2018.

⁴³ Ibid, page 2.

⁴⁴ In 2017, Everett was awarded \$250,000, and Bellingham \$500,000 for pedestrian improvements.

and will be awarded in 2019. Funds must be used within 3 years.⁴⁵

- Tactical urbanism techniques, as part of a planning process⁴⁶

WSDOT also provides the Pedestrian and Bicyclist, and the Safe Routes to School grant programs, with awards biannually. The 2019-2021 funding period is expected to include approximately \$21 M in state and local funds. Only projects that are included in the TIP, or in progress of being added to the TIB, are deemed eligible for these two grant programs.

The Pedestrian and Bicyclist program funds infrastructure and design projects that improve pedestrian and/or bicyclist safety and/or mobility. Eligible infrastructure and design projects include:

- Crossing/intersection improvements
- Traffic calming/speed reduction
- Signage and pavement markings
- Pedestrian-scale lighting
- On-road bicycle facilities
- Bicycle parking facilities
- Shared-use paths and trails
- Vehicle speed feedback signs and photo enforcement
- Sidewalks, sidewalk buffer zones, curbs, curb ramps, and gutters
- Walking and bicycle count programs
- Public engagement and encouragement campaigns
- Network planning and analysis
- Preliminary right of way acquisition activities, environmental analysis, and engineering design

Safe Routes to School program funds may be used for infrastructure improvements within two miles of a school and/or local transportation safety programs serving students from kindergarten to 12th grade. The improvements must be for improving the safety and/or increasing the number of students walking or biking to school. Establishing walking school buses and bicycle trains,⁴⁷ and delivering bicycle and pedestrian educational programming are considered eligible education/encouragement activities.⁴⁸

1.6 Plan and Policy Review and Recommendations

The City’s adopted policies and plans guide investments in Arlington’s transportation network. These policies and plans include comprehensive visions, regional coordination efforts, and specific projects and funding levels. In addition to these plans, the City Council also created a Transportation Benefit District (TBD) in 2013 that provides a designated source of transportation funding from taxes and fees. The TBD seeks to preserve, maintain, and as appropriate, construct or reconstruct transportation infrastructure. While the current TBD statute does not include infrastructure for pedestrian or bicyclists, ongoing pavement preservation work can be used in combination with other local funds to implement multimodal improvements.

⁴⁵ Washington State Department of Transportation, “TIB Funding Opportunity – Complete Streets Award.” <http://www.tib.wa.gov/grants/completestreets/completestreets.cfm>. Accessed 02-21-2018.

⁴⁶ Washington State Department of Transportation, “Call for Projects – Pedestrian and Bicycle Program and Safe Routes to School.

www.wsdot.wa.gov/LocalPrograms/saferoutes/callforprojects.htm. Accessed 03-06-2018.

⁴⁷ Eligible costs include those related to recruiting adult leaders, training, and safety equipment.

⁴⁸ Washington State Department of Transportation, “Call for Projects – Pedestrian and Bicycle Program and Safe Routes to School.

www.wsdot.wa.gov/LocalPrograms/saferoutes/callforprojects.htm. Accessed 03-06-2018.

Arlington’s current transportation-focused plans and policies provide planning- and design-based guidance for the Complete Streets Policy’s (Plan) development and implementation. Arlington’s recent planning updates well positions the City to leverage its planning investments for implementing the Complete Streets Policy and this Plan. The transportation policies and plans reviewed include the:

- 2015 Comprehensive Plan with 2017 Update
- Mixed Use Overlay Development Code
- 2018-2023 Six Year Transportation Improvement Plan – Project List
- Transportation Benefit District Budgets and Annual Reports (2016 to 2018)
- Parks and Recreation Master Plan 2016-2021
- Emerging Median Planning Guide
- Transportation 2035 Plan with 2017 Update
- 2017 Arlington and Darrington Revised Community Revitalization Plan
- 2015 North Stillaguamish Valley Economic Redevelopment Plan

From a review of the nine local and regional transportation-focused policies and plans listed in above, broad community visions and goals, and specific project needs emerged for the Plan’s consideration. It is worth noting that the nine plans do reflect current conditions and priorities, as six of the plans were either last updated or adopted in 2017, and the other two plans were either adopted in 2016 or 2015. The frequency of the plans’ Complete Street Plan references and recommendations and a full review of the Complete Street planning and policy challenges and opportunities is provided in Appendix I.

Table 1. Review of Arlington’s Policies and Plans

Complete Streets Policy Reference	Number of Plans	Plan Title
Reference Complete Streets (generally)	3	<ul style="list-style-type: none"> • Comprehensive Plan (2017 Update) • Mixed Use Overlay Development Code • 2035 Transportation Plan (2017 Update)
Provide Guidance for Developing a Complete Streets Policy	3	<ul style="list-style-type: none"> • Comprehensive Plan (2017 Update) • 2035 Transportation Plan (2017 Update) • 2016-2023 Parks and Recreation Master Plan
Provide Guidance for Implementing a Complete Streets Policy (goals or program elements)	6	<ul style="list-style-type: none"> • Comprehensive Plan (2017 Update) • Mixed Use Overlay Development Code • 2035 Transportation Plan (2017 Update) • North Stillaguamish Valley Economic Redevelopment Plan (2015) • Transportation Benefit District Planning Documents • 2016-2023 Parks and Recreation Master Plan
Outline Steps for Implementing a Complete Streets Policy (projects)	5	<ul style="list-style-type: none"> • Comprehensive Plan (2017 Update) • Mixed Use Overlay Development Code • North Stillaguamish Valley Economic Redevelopment Plan (2015) • 2018-2023 Transportation Improvement Plan List • 2016-2023 Parks and Recreation Master Plan
Identify Local Stakeholders for implementing Complete Streets Policy	5	<ul style="list-style-type: none"> • Mixed Use Overlay Development Code • Arlington and Darrington Revised Community Revitalization Plan (2017) • North Stillaguamish Valley Economic Redevelopment Plan (2015) • 2018-2023 Transportation Improvement Plan List • 2016-2023 Parks and Recreation Master Plan

In addition to the eight local and regional plans, Arlington’s Roadway Median Planning Guide, still being developed, was also reviewed through discussions with City staff. Once completed, the Median Planning Guide will provide additional guidance for engineers and design professionals in considering appropriate roadway geometrics, and the use of landscaping elements along sidewalks and in medians.

1.7 Community Engagement

In developing this Plan, the City implemented recommended strategies from a Community Engagement Framework (CEF) Plan. The CEF Plan identified the community engagement purposes, goals, and strategies for this Plan's development. The CEF Plan's recommendations were developed based off conversations with the City's project management team, a review of local demographic information, and community engagement best practices. The recommended community engagement purpose was: "to generate and expand community interest, solicit input on ideas, and attain buy-in of the proposed concept." The recommended community engagement goals were to deliver an inclusive community engagement process that:

- Builds on current efforts of the City and its partner agencies and engages input from City staff and across departments to create a comprehensive and implementable Complete Streets Policy;
- Equitably conducts outreach to residents throughout Arlington, embracing diverse communities;
- Promotes fair treatment so that all residents and visitors to Arlington, including all racial, ethnic, and socioeconomic groups, benefit from the project; and,
- Ensures the community contributions are considered for incorporation into the final policy
- Provides ongoing opportunities for stakeholders to participate in constructive two-way conversations with the project team.

Using the CEF Plan, the City delivered a variety of in-person and online opportunities for community members to learn about the project, engage with the project team, and to provide feedback. In the Spring of 2018, the City launched a webpage with a project overview and schedule, links to Complete Streets resources, and project contact information. In addition to the online resources, the Project Team hosted a

Work Session and Community Workshop on April 26, 2018. The Work Shop was attended by Mayor Tolbert, members of the City Council, City Staff, and representatives from WSDOT, Community Transit, and other local and regional stakeholders. Members of the public and City Staff participated in the Community Workshop, which included a rotating set of information and feedback boards, and activity tables. A detailed summary of the feedback received during the Community Workshop is provided in Appendix K. Updates on this Plan's development were presented to the City Council and the attending public in March and November 2018.

The community also engaged with Complete Streets practices through six City-held Walkshops. During the Walkshops, community members gathered and walked with a Project Team member identifying barriers and opportunities for improved mobility for all modes, ages, and abilities. The Walkshops participants identified desired design and maintenance improvements for sidewalks/walking paths and roadways, and desired behavioral changes among roadway users. The participants shared their desire for:

- Safe, wide, and continuous sidewalks/walking paths to beaches, ramps, and bus stop shelters
- Buffers between the sidewalk/walking path and the roadway
- Wheel stops between the sidewalk/walking path and parking areas
- Sidewalk crossing markings
- Regular vegetation pruning and surface quality maintenance on sidewalks/walking paths.
- Lower traffic speeds, especially at intersections
- Increased separation and markings between roadways users via bike lanes and marked crosswalks
- Increased and additional lighting, more mid-block crossings, and signs at

intersections to improve pedestrian crossings

In addition to the previously mentioned design and maintenance improvements, the participants identified the need to change roadway behaviors to improve the safety and comfort of all users. Participants suggested additional driver education and engagement around the importance of stopping and yielding at crossings, especially when pedestrians are present.

Continued community engagement shall include annual reporting made available to the public through the City website, presented to City Council, and shared with City Staff. The Complete Streets Website will remain active with links to the Improvement Plans allowing easy review, comments, and suggestions from citizens. The Complete Streets Advisory Committee will continue to solicit feedback and communicate with the public about Complete Streets.

2.0 Process and Documentation

2.1 Roles, Responsibilities, and Coordination

2.1.1 City Departments and Divisions

Implementing the Complete Streets policy and developing the Complete Streets Policy will require on-going coordination between the Community and Economic Development, Public Works, and Maintenance and Operations departments. Other departments and key staff members will also need to be integrated into the planning, operation, and maintenance decision-making processes. For example, the Airport Department, Community Revitalization Project Manager, Finance Department, Police Department, and Fire Department all play important roles in managing the City's built environment and transportation network. In coordinating the policy's and Plan's implementation, the City should leverage existing shared goals and priorities between the departments and divisions.

A review of the City's departments' and divisions' goals and policies found a high-quality delivery of community members- and customer-facing services, and the efficient and effective use of community resources to be frequently shared top-level priorities. Many of the departments that will be essential in implementing the Complete Streets program have a service-focused mission or vision statement. These departments include, but are not limited to: Fire/EMS, Maintenance and Operation, Police, Community and Economic Development, and the Utilities Department. In addition to the prevalence of service-focused mission and vision statements, nine of the departments and divisions involved with the

program's implementation spoke to the importance of providing efficient services and using the community's resources effectively.

The review was conducted based on the City's organizational structure as expressed on the City's internal documents, website, planning documents, and in the biennial budget. The departments' missions, functions, relationships to other departments and divisions were analyzed using a mixed approach of considering both external communication sources and funding priority documents. An additional level of consideration was applied for connecting the departments' missions and functions to the Complete Streets Policy's implementation and Plan's development.

From the 22 department and division structures, plans and budget documents analyzed, the top department and division opportunities and challenges for developing and implementing the Complete Streets Program were summarized (see Table 2).

Table 2. Departmental Challenges and Opportunities

Department and Division Opportunities	Department and Division Challenges
Clear mission and vision goals and themes connect multiple departments and divisions	Planning, funding, and implementation responsibilities for elements of the healthy, active transportation network are divided-up among three different departments and multiple divisions: Airport, Community and Economic Development, and Public Works
The City’s budget uses multiple funding sources to support investments in the built environment	The City does not currently have a dedicated funding source for improving healthy, active transportation services such as walking, biking, and transit infrastructure, planning or education
The departments’ and divisions’ missions and visions are forward looking and based on growth and new developments	The departments’ and divisions’ missions and visions do not currently factor or prioritize the abilities, accommodations, or needs of vulnerable community members such as specific communities of older adults, people with disabilities, or individuals in low-income households

2.1.2 Boards, Commissions, and Committees

In addition to departments and divisions, the City has a system of boards, commissions, and committees (BCCs) that guide the City’s planning, policy, and funding decisions. These BCCs include the City Council, the Planning Commission, and the Transportation Benefit District, along with a network of other citizen-led BCCs.

The missions, functions, relationships to other BCCs, and duties related to a Complete Street Plan were reviewed based on the City Code, information on the City’s website, and in planning and budget documents. Based on this review the top BCC opportunities and challenges were identified for developing and implementing the Complete Street Plan:

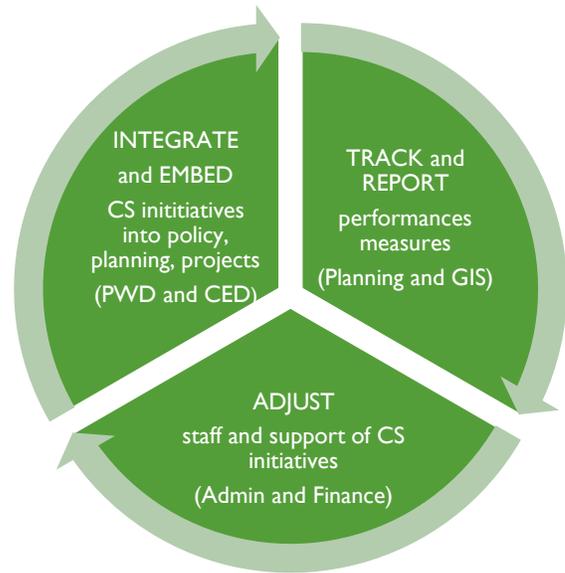
Table 3: BCC Complete Streets Program Development and Implementation Opportunities and Challenges

Board/Commission/Committee Opportunities	Board/Commission/Committee Challenges
The City’s TBD Governing Board is focused on transportation items.	The TBD Governing Board is not currently able to program funds from the TBD to maintain or improve conditions expressly for pedestrians, bicyclists, transit riders; or, to make accessible accommodations.
The PARC/Tree Board creates a centralized forum for park-, recreation- and tree-focused planning efforts and funding discussions.	The City does not currently have a designated public forum, board, commission, or committee to discuss and provide planning and funding recommendations on healthy-active modes of transportation. ⁴⁹
The Youth-Council establishes a cross-disciplinary channel for the needs, ideas, and collaboration opportunities for the youth to be discussed and planned.	The City does not currently require the representation of individuals who rely on healthy-active modes of transportation for non-recreation trips, older adults, or people with disabilities on the City’s boards, commissions, or committees.

⁴⁹ The Snohomish County Health District does provide regional programs and service coordination efforts.

2.2 Project Development Process

Implementing and managing the Complete Streets Policy among the various department, divisions, and BCCs will require defined roles and responsibilities for all stakeholders, and clear steps for decision-making processes. These processes should include opportunities for external stakeholder engagement with community members, business and school districts, and state regional, and transit agencies. The project development process outlined in this Plan will assist staff in effectively developing and reviewing projects by establishing process steps and tools, including the Complete Streets Checklist.



The primary roles and responsibilities for the Complete Streets Policy’s and Program’s internal and external stakeholders are provided below in Tables 4 through 6.

2.2.1 Process Overview

The Policy’s implementation will be led by the Community and Economic Development and Public Works Administration departments.

Staff from the two departments will work collaboratively to integrate and embed the Policy’s initiatives into the City’s policies, plans, and projects. The departments’ planning and GIS staff will manage the collection and reporting of the Plan’s implementation process based on the Plan’s recommended performance

measures. The departments’ leadership will in turn report these performance measures in the department’s plans and share them with the City’s Administration and Finance departments. The Administration and Finance Departments will report the performance measures in the City’s key budget documents, such as the Annual Budget, the CIP, and the Transportation Benefit Districts’ annual plan. Providing regular, data-based reports on the City’s Complete Streets implementation will assist staff in generating and growing the Policy’s and Plan’s needed long-term support from staff, elected officials, and external stakeholders.

Table 4. Department and Division Implementation Roles and Responsibilities

Departments and Divisions		
Stakeholder	Responsibilities	Complete Streets Program Roles
Administration	Oversees goal and policy attainment, economic development, recreation, and communication and public information efforts.	Manages interdepartmental coordination for the implementation of the Policy.

		<p>Provides Policy, Plan, and project information on the City’s website and through social media platforms.</p> <p>Integrates the Policy’s initiatives into the City’s economic development and recreation goals and programs.</p>
Airport	<p>Manages and maintains the airport facilities and grounds. Coordinates aviation, industrial and commercial development at the airport. Provides security, administrative, and planning services.</p> <p>Maintains approximately 5.5 miles of recreational path; 484 street, informational and path signs; 4 public restrooms; over 10 miles of fencing including 23 gates (6 of them are automated); and, approximately 2.7 acres of landscaping. Numerous trails, parks and recreational facilities are also located within, connected to, or located near the Airport.</p>	<p>Embeds the Complete Streets Policy initiatives into its pathway maintenance operations, improvement project designs, and development planning efforts.</p>
Community and Economic Development	<p>Manages the City’s development permit processes, including building permit submittals, plan review requirements, civil, rights-of-way, public road closures, developer agreements, easements.</p> <p>Oversees the implementation of the Design and Construction guidelines, including the Low Impact Design Manual.</p>	<p>Integrates the Complete Streets Policy initiatives into the City’s development permit review and compliance check processes.</p> <p>Engages with and educates local developers on the City’s Complete Streets program’s goals, processes, requirements, and opportunities.</p> <p>Engages in area and corridor planning efforts that promote and strengthen the City’s multimodal transportation network.</p> <p>Coordinates across departments to identify, design, and deliver Complete Streets-focused street design, park, and development projects.</p> <p>Manages the data collection and reporting efforts for the Plan’s performance measures</p>
Finance	<p>Coordinates across departments and BCCs on the management and reporting of the Transportation</p>	<p>Develops reporting processes that allow departments and BCCs to easily track the</p>

	<p>Benefit District Budget, the Biennial Budget, Enterprise Funds, Internal Service Funds, and the Trust and Agency Funds</p> <p>Provides financial management support for all departments, including those that oversee the development of plans, policies, and projects that impact the public way</p>	<p>City’s progress in implementing the Complete Streets Policy initiatives</p> <p>Highlights the City’s Complete Streets implementation progress in the City’s Transportation Benefit District Budget, CIP, and annual budget</p>
Fire / EMS	<p>Delivers Fire and EMS response and prevention, including responding to traffic collisions and providing medical care for emergency calls</p>	<p>Coordinates with Community and Economic Development, Public Works, and other departments in designing safer streets that produce fewer injuries and property damage</p> <p>Collaborates with Community and Economic Development, Public Works, and other departments in identifying design and operational considerations for Fire / EMS’ operation in all roadway environments</p>
Human Resources	<p>Administers the City’s policies, training of employees, and the employee benefit program</p>	<p>Integrates Complete Streets knowledge and experience in job postings for positions related to the operation, design, and maintenance of the City’s multimodal transportation network</p> <p>Collaborates with City staff to deliver Complete Streets training to all current and new employees</p> <p>Delivers employee benefit programs that promote the use of the IRS’ transportation fringe benefit program and multimodal transportation options</p>
Legal	<p>Provides legal advice to the City’s policy makers and program delivery staff</p>	<p>Coordinates closely with BCCs, and the Administration, Community and Economic Development, and Public Works, departments in integrating the Complete Streets Policy Initiatives into the City’s Comprehensive Plan and Code</p> <p>Participates in regular professional development training opportunities on current best-practice and emerging trends in transportation design, operations, and risk management</p>
Library	<p>Distributes print digital, and experience-based information</p>	<p>Develops and delivers educational programs that support multimodal</p>

	<p>throughout the community through classes, special events, newsletters, blogs, and video and audio channels</p>	<p>transportation (e.g. bike maintenance 101, how to ride the bus, and the health benefits of walking)</p>
<p>Maintenance and Operations</p>	<p>Maintains and operates the City's public spaces, street lights, public storm drainage system, streets facilities, parks and trails, and airport. Provides street sweeping services</p> <p>Provides a variety of recreational opportunities for the community and visitors. Partners with community providers to deliver activities such as athletic and fitness classes, hobby classes, and educational classes</p>	<p>Integrates the Complete Streets Policy initiatives into the its policies and procedures, including: delivering pedestrian-oriented lighting fixtures, and developing street sweeping operations for on-street bike facilities</p> <p>Collaborates with design and planning staff across the City on street design projects, and identifying maintenance and operational needs and impacts on maintenance and operation resources</p> <p>Embeds the Complete Streets Policy initiatives into the planning, design, operation, and maintenance activities for the City's trail and park network</p> <p>Collaborates across departments and with community providers to deliver recreational and educational opportunities that promote safe walking, rolling, and bicycling</p>
<p>Police</p>	<p>Responds to and delivers preventative programming for crimes and emergencies</p> <p>Oversees community-based policing and engagement efforts, including: a volunteer-run bicycle registration program, the Wipeout Graffiti program, a Citizen's Academy, and a radar trailer for Neighborhood Watches and Business Watches</p>	<p>Integrates the Complete Streets Policy initiatives into the Department's preventative programming and response practices</p> <p>Highlights the cost of unsafe streets and traffic collisions, and the City's progress towards safer streets in the Department's annual reports</p> <p>Collaborates with other departments on integrating Rules of the Road and other safe streets initiatives into the Department's bicycle registration program, Citizen Academy, and radar trailer programs</p>
<p>Public Works, Administration</p>	<p>Oversees the Public Works Department's clerical, accounting, financial, administrative, and management needs. Gathers and maintains the City's engineering and development records</p>	<p>Integrates the Complete Streets Policy initiatives into the Department's transportation, utility, operational and maintenance practices</p> <p>Coordinates with planning, design, communication, and operation and</p>

		<p>maintenance staff across the City on projects that impact the City’s multimodal transportation network</p> <p>Utilizes the project selection criteria for prioritization of Complete Streets projects</p>
Public Works, GIS / Engineering	<p>Creates and maintains the City’s GIS data. Manages the City’s internal and public-facing GIS products and mapping services</p>	<p>Maintains the City’s GIS data, and provide regular updates on the City’s Complete Streets Policy implementation, including traffic collision reporting</p> <p>Develops public-facing maps on the City’s existing and planned multi-modal transportation network</p>
Public Works, Transportation	<p>Implements the City’s Transportation Plan</p> <p>Manages the design and construction of City projects, including Capital Facilities projects, and Transportation Benefit District projects</p> <p>Develops and implements the City's Engineering Design Standards, including streets and stormwater</p>	<p>Integrates the Complete Streets Policy initiatives into projects’ design plans, and construction documents and processes</p> <p>Updates the City’s Engineering Standards, including streets and stormwater to reflect the Complete Streets Policy’s multimodal priorities and initiatives</p> <p>Coordinates with design, planning, and first response staff across departments in the planning, design, and construction of projects that impact the City’s multimodal transportation network</p>
Public Works, Utilities	<p>Manages the City’s utility services (water, wastewater, and stormwater), and the City’s solid waste and recycling program</p>	<p>Integrates the Complete Streets Policy initiatives into utility projects’ designs and construction practices, and daily operations of the solid waste and recycling programs</p> <p>Delivers educational training and engagement activities with field employees on safe operational practices in and around multimodal transportation settings. Develops regular training refresher courses for on-road operators</p> <p>Identifies and implements opportunities to improve the safe operation of large vehicles (including Waste Management of Washington’s recycling and garbage trucks)</p>

Table 5. BCCs’ Complete Streets Policy Implementation Roles and Responsibilities

BCCs		
Stakeholder	Responsibilities	Complete Streets Program Roles
City Council	<p>Adopts, amends and repeals ordinances, including Comprehensive Plan amendments, Zoning Map amendments, and Land Use Code amendments</p> <p>Serves as the Transportation Benefit District Governing Board</p> <p>Approves the City's Biennial Budget, which includes funding for the General Fund, Special Revenue Funds (including the street maintenance fund), Capital Project Funds (including the Transportation Improvement Fund, and Park Improvement Fund), Enterprise Funds (including the Utility, CIP, and Airport Funds), and Internal Service Funds (including the Public Works Maintenance and Operations Fund)</p>	<p>Adopts and embeds the Complete Streets Policy initiative as part of the City’s 2017 Comprehensive Plan, and Transportation Element</p> <p>Integrates the Complete Streets Policy initiatives into future oversight decision making processed for the Transportation Benefit District</p> <p>Identifies and allocates funding resources to implement the Complete Streets Policy initiatives</p>
Transportation Benefit District Governing Board	<p>Adopts an annual budget, develops an annual work plan with a list of pavement preservation projects</p>	<p>Integrates the Complete Streets Policy into the Board’s reports (e.g. including metrics on the projects’ impact to the multimodal transportation network)</p> <p>Integrates the Complete Streets Policy initiatives into the pavement preservation projects, and annual budget</p>
Arlington Planning Commission / Design Review Board	<p>Provides recommendations and reports to the City Council on ordinances, resolutions, and other proposals relating to amendments to the City's comprehensive plan, amendments to the City's land use code, and other matters and subjects referred to in the Revised Code of Washington (RCW) Chapter 35A.63</p> <p>Acts as the City’s Design Review Board, reviewing development projects for consistency with the City’s design standards</p>	<p>Embeds the Complete Streets Policy initiatives into recommendations for the City Council's on actions related to Comprehensive Plan amendments, Zoning Map amendments, and Land Use Code amendments</p> <p>Integrates complete streets-supportive recommendations and findings into the Commission/Board’s review of Special Use Permit appeals, zoning permits, Conditional Use Permits, and Land Use Requests; and in implementing the Mixed Use Overlay Development Code</p>

Arlington Parks, Arts and Recreation Commission (PARC)/Tree Board	Oversees the preservation, maintenance, and care for 30 acres of public land	Works with City staff in developing off-street path and trail connections and maintaining the off-street network and facility amenities such as bike parking and washrooms
Arlington Youth Council	Provides recommendations to the Mayor and City Council on policies affecting youth in the community, on efforts and activities geared at the youth, on funding for youth initiatives	Integrates the Complete Streets Policy initiatives into the Council’s recommendations to the Mayor and City Council Advise City staff on the perspective, needs, and design considerations of young people using the City’s multimodal transportation network
Arlington Airport Commission	Oversees approximately 5.5 miles of recreational path; 484 street, informational and path signs; 4 public restrooms; over 10 miles of fencing including 23 gates (6 of them are automated); and, approximately 2.7 acres of landscaping. Numerous trails, parks and recreational facilities are also located within, connected to, or located near the Airport	Coordinates with City staff on the implementation of adjacent street and trail projects, and access to and through the airport property Coordinates with City staff on the development of approximately 124 acres for a future Airport Business park, as to support multimodal transportation options and access
Arlington Cemetery Advisory Board	Oversees the preservation, maintenance, and cares for 30 acres of public land	Coordinates with City staff on the implementation of adjacent street and trail projects, and access to and through the cemetery property
Library Board	Advocates to the City Council for additional library resources and facilities for the Arlington Community. Works with City staff in making facility improvements to the Arlington Library. Coordinates with the Friends of the Library organization	Coordinates with City staff on the implementation of Complete Streets projects connecting to and serving library facilities Develops and delivers educational programs that support multimodal transportation (e.g. bike maintenance 101, how to ride the bus, and the health benefits of walking)
Lodging Tax Advisory Committee	Recommends grant funding recipients to the City Council for applications geared at: tourism marketing, special events/festivals marking and operation, non-profit organization's tourism-related facilities' operations, or municipalities' tourism-related facilities' operations and capital expenses	Embeds the Complete Streets Policy and the Plan’s initiatives into the grant application review and scoring process

Table 6. External Agencies' Complete Streets Policy Implementation Roles and Responsibilities

External Agencies		
Stakeholder	Responsibilities	Complete Streets Program Roles
Puget Sound Regional Council (PSRC)	Develops regional policies and plans, and allocates state and federal funding for transportation projects across the region	Recognizes and supports the City's Complete Streets Policy when developing regional plans and considering transportation project funding requests
WSDOT	Plans, designs, constructs, and maintains the statewide multimodal transportation network Partners with local municipalities to maintain and improve the local multimodal transportation network Allocates federal and state funding for transportation network improvements and programming	Recognizes and supports the City's Complete Streets Policy when developing regional plans and considering transportation project funding requests Coordinates with the City's administrative, planning, and design staff on state projects occurring within the City's limits
FHWA	Provides standards and guidance for the design of multimodal transportation network elements	Reviews environmental assessment documents for federally-funded projects
Community Transit	Provides fixed route and Dial-A-Ride Transportation (DART) paratransit operations, and vanpool programs	Coordinates with the City's administrative, planning, and design staff on transit service plans and routing changes Participates in corridor planning and design initiatives. Provide input on the location and design of transit stops, speed mitigation features Promotes safe operations of transit vehicles and vanpool vehicles in and around the City's multimodal transportation network

Table 7. Community Groups’ Complete Streets Policy Implementation Roles and Responsibilities

Community Groups		
Stakeholder	Responsibilities	Complete Streets Program Roles
The Community	Elects local officials, votes on tax levies, and makes Arlington the community it is by living, working, playing, and participating in community life.	Participates in corridor/area planning and give input on street design goals and priorities Practices sound judgement and safe travel behavior when walking, rolling, riding, driving, and traveling in and around Arlington
Advocacy Groups	Assists the City in considering the individual needs of the multimodal transportation system’s users	Participates in stakeholder involvement efforts, provide input on plans and designs, lead education and encouragement events, and promote public hearings and meetings
Business Associations (Stilly Valley Chamber of Commerce, Downtown Arlington Business Association)	Leads economic development programs, business coordination, beautification, and advocacy for specific business areas	Participates in corridor/area planning, promotes participation in planning efforts among its members, provides insight on future development and revitalization efforts, and gives input on street design goals and priorities Hosts educational and outreach programming that attracts visitors to Open Streets events, and fun walk/runs and bike rides

2.3 Complete Streets Checklist

In addition to tracking and communicating the Policy’s and the Plan’s progress, it is essential that staff establish processes to assist in the day-to-day implementation of the Policy and the Plan. One process that can help is use of the Complete Streets Checklist. The Complete Streets Checklist (the Checklist) can be used by elected officials and policy makers, developers, city staff, and external stakeholders to understand the expectations and impacts of development on the local multimodal transportation network. A copy of the Checklist is provided in the Appendices. Several communities from the Complete Streets Best Practices and Peer Cities review identified Complete Streets checklists as a helpful tool for implementing policies and plans, and for tracking staff’s decisions around developments.

The cities of Seattle and Saint Paul, MN, and the New Jersey Department of Transportations implemented Complete Streets Checklists as part of their Complete Streets programs. A full discussion of the Complete Streets Best Practices and Peer Cities review is provided in Appendix J.

The Checklist works with and complements but does not replace the City’s existing standards, manuals, standards, plans and maps. For quick reference, a list of many of City’s standards and copies of the City’s improvement maps are provided in Appendices C-H. The Checklist’s references to the City’s adopted standards and plans will strengthen the City’s efforts to move towards fully implementing these documents, and to establishing set expectations with developers on the City’s vision and design standards.

2.3.1 Process and Responsibilities

The developer, or their designated applicant, is responsible for completing and submitting the Complete Streets Checklist for all private development and re-development projects that occur within city limits. The Checklist will be a required submittal document with the Land Use process and site civil submittal. Developers are encouraged to reach out to the Community and Economic Development Department to secure and review the Checklist during the initial stages of their project’s development. The City will provide the checklist and relevant improvement plan documents during the General Information Meeting (GIM) developers are encouraged to take advantage of. Early conversations with staff and development partners may generate project synergies and opportunities to improve the development’s access and connections to the multimodal transportation network.

The Community and Economic Development Department is responsible for:

- Managing the Checklist’s implementation and use, and the project-level data recorded through the Checklist
- Managing the review process for fully-completed Checklists, and for establishing internal protocols for staff coordination to review the Checklist’s proposals and information
- Providing approval and variance determinations for full-completed Checklists to the applicant
- Establishing a regular reporting procedure on approval and variance determinations
- Working with staff from multiple departments and business associations in promoting the Checklist among the local development community.

The Public Works Agency will be responsible for:

- Providing administrative, technical, and data management support to the Community and Economic Development Department during Checklist reviews, and as part of program management activities

Providing Average Daily Trip estimates and Overall Conditions Index (OCI) and Standards to applicants during the Checklist’s submittal process.

Staff from various departments and divisions are responsible for reviewing completed checklists and providing information, support, and technical-expertise to the Community and Economic Development Department. Additionally, the Public Art Committee should coordinate with the Community and Economic Development Department and applicants on identifying and promoting public art opportunities.

2.3.2 Variances

The municipal code addresses variances. Refer to Section 20.20.030 for more information.

2.3.3 Complete Streets Prioritization Plan

The following is a guide for prioritization of Complete Streets Projects within the City of Arlington. As funding for projects comes available, it is important the City consider several factors when choosing which projects to complete first. Economic and racial equality, connectivity, safety, age and health equity factors all play a part in prioritization of projects. The City of Arlington has compiled a list of Bicycle, Pedestrian, and Transit accessibility projects that all seek to create connectivity within our community and encourage healthy non-motorized travel, but not all projects are equal. Below is a list of weighted

factors the city shall consider when choosing which complete streets projects to pursue.

In an effort to make the process simple the following equation has been created. Projects meeting all the factors will score 100%.

$$\text{Priority Level} = \text{EQ} + \text{CC} + \text{SI} + \text{YT} + \text{ELD} + \text{ADA} + \text{BI} + \text{PED} + \text{BUS} + \text{TRA}$$

SI = (12 points) Safety Improvements

In order to be considered a safety improvement project, the project must have some component of specific safety measure included. Examples include, RRFB or HAWK crossings, separated bike or pedestrian areas, reduced speeds, and traffic calming.

ADA = (11 points) Accessibility Improvements;
A project must include specific accessibility improvements for this factor. This could include new or improved accessible sidewalks or trails, installation of new ramps, improved access to transit stops, etc. This would also include projects that increase accessibility to programs and facilities that serve the disabled community.

EQ = (11 points) Economic and racial equality;
The City of Arlington has done an equality analysis based on census data for both income and race based on this information the following areas have been identified as economic and racial equality priority areas;

- Smokey Point
- East of Stillaguamish Ave
- Neighborhoods around the Arlington Airport
- Old Town near SR530
- Kent-Prairie Neighborhood

Projects in that serve these areas are considered Economic and racial equality projects.

YT = (10 points) Youth Considerations;
For a project to have a youth consideration component it should demonstrate to improved access to schools, parks, or other youth targeted

destinations. This includes projects located on school routes or identified in Safe Route to School studies.

ELD = (10 points) Elderly Considerations;
Projects that increase accessibility to senior facilities, neighborhoods, and community centers.

BI = (10 points) Bicycle Improvements;
Any project that will improve connectivity for cyclists such as shared use trails, bike lanes, and shared lanes can be considered bicycle improvements.

PED = (10 points) Pedestrian Improvements;
Any projects that include a pedestrian improvement component, include sidewalks, improved or additional crossings, mixed use trails, and intersection improvements can be considered a pedestrian improvement.

BUS = (10 points) Transit accessibility;
Projects that have a transit improvement component, such as added or improved bus stops, and projects that can show improved connectivity to the transit system can be considered transit accessibility projects.

CC = (8 points) Community Connectivity;
Projects that can show improved connectivity between neighborhoods, business centers, arts, activities, and shopping will be considered community connectivity projects.

TRA = (8 points) Traffic Improvements;
Any project that demonstrates an improvement to traffic flow, safety, or capacity can be considered a traffic improvement project.

2.4 Next Steps: Street Design Typologies

The City should consider developing a set of context-specific street typologies to ensure that street development opportunities match with local context Street typologies can be used to

refine the City's design standards plans for the multimodal transportation network based on the roadway's character, surrounding land uses, and position within the transportation network. For example, a roadway's width, traffic volumes, connectivity impact the appropriateness of certain design treatments such as curb bulb-outs, shared use paths, separated bike lanes, and enhanced transit stops. When developing the street typologies, City staff should refer to data

collected through the Complete Streets Checklist to understand where development is occurring based on the City's roadway classifications and cross connection type. Additionally, staff should integrate the cross sections and design guidance from Section 3 into the street typologies.

3.0 Cross-Sections and Design Guidance

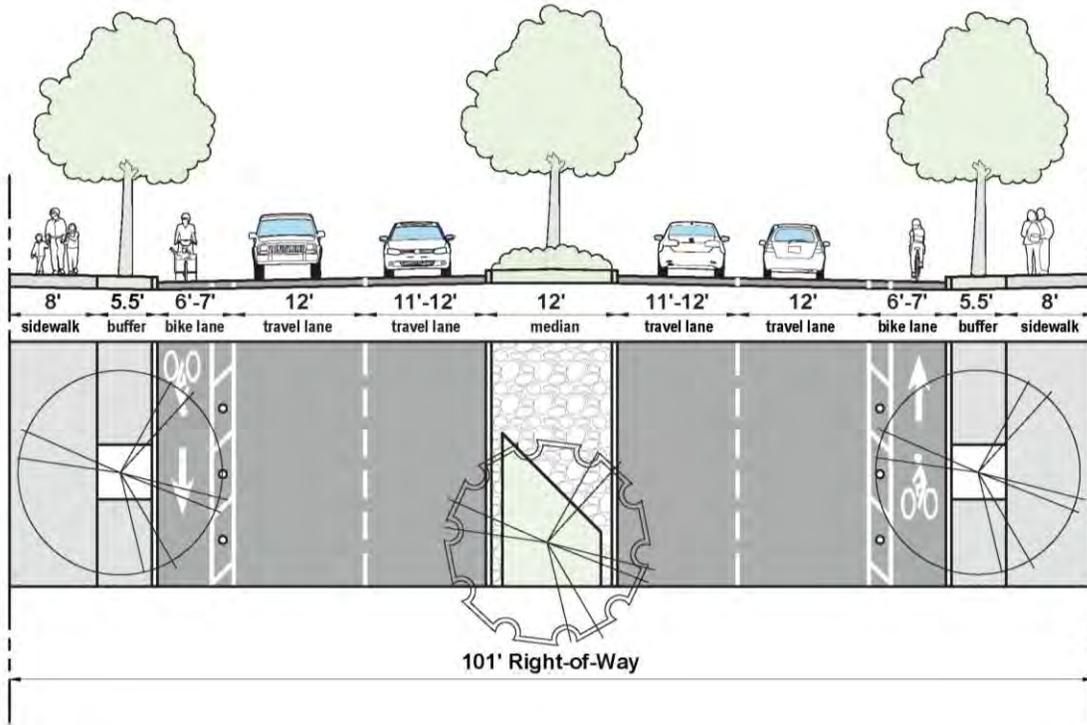


Figure 11. Example Complete Streets Corridor Cross Section

3.1 Roadway Design Criteria Parameters and Standards

3.1. Introduction

Street design decisions—such as how many travel lanes are needed, whether to include on-street parking, and what type of bikeway to provide—are made and documented initially during the project scoping phase of a street design project and may be revised during the conceptual design phase. These decisions must also consider stormwater management, utility services, building access, trees and other vegetation. These decisions are typically oriented around what are called design criteria, which guide the project toward achieving a safe and effective outcome.

Each street type in the City’s network has a unique set of parameters for roadway and pedestrian zone design criteria that make the street type compatible with and supportive of the land use, utilities, and other context. Rather than looking broadly at street types to develop design criteria, this Plan addresses criteria for specific corridors identified by City staff. Design criteria for these corridors—and associated standards for making design decisions—are described in the following pages.

Table 8. Existing Conditions and Planned Improvements on Identified Complete Streets Corridors

Corridor	Functional Class	ROW (typ.)	Paved Width (typ.)	Posted Speed	ADT	Planned Improvements through TIP
Smokey Point Blvd	Collector/ Arterial	60' (180 th Pl NE) 100' (N of 172 nd St NE) 80' (168 th St NE) 70' (188 th St NE)	60'	35 mph	6,600 north of SR 530 20,000 south of SR 530	R1. 188 th St to SR 530: reconstruct from 2 lanes to 3 R30. From SR 531 (172 nd St) to 188 th St: reconstruct from 2 lanes to 5
67th Ave NE	Arterial	70' (SR 531) 60' (Bovee Ln-188 th St NE) 53' (67 th Ave NE_)	36'	35 mph	10,000	N/A*
204th St NE/ Cemetery Rd	Collector/ Arterial	70' (49 th Ave NE) 60' (East of 51 st Dr NE)	48'/58'	35 mph	5,700-7,500	R2. Cross Town Connector: Cemetery Rd from 47 th Ave to 188 th St: Reconstruct from 2 lanes to 3
E Highland Dr	Arterial	30' (S Olympic Ave) 45' (French Ave- Stillaguamish Ave)	38'	25 mph	3,500-4,500	R5. From SR 9 to Stillaguamish Ave from 2 lanes to 3
SR 531/ 172nd St NE	State Route (Arterial)	90' (W of 43 rd Ave NE) 50' (59 th Ave Ne-67 th Ave NE) 75' (79 th Ave NE)	85'/68'	35 mph	24,000	R1A. From 43 rd Ave to 67 th Ave: reconstruct from 2 lanes to 4. Install roundabouts at 43 rd Ave, 51 st Ave, 59 th Ave and 67 th Ave R15B. From 67 th Ave to SR 9: reconstruct from 2 lanes to 4
SR 9/ 177th St NE	State Route (Arterial)	150'	46'-60'	45 mph	11,000	N/A*
188th St NE	Collector	40'	24'	35 mph (west of airport) 25 mph (east of airport)	5,200 2,500	N/A*

Data sources: Snohomish County Assessor's Office (ROW), WSDOT Traffic Volumes and 2017 Update to the Arlington Transportation 2035 Plan/Comprehensive Plan Comp Plan (ADT), Google Maps (Paved width), Comp Plan (TIP projects)

* This corridor was not included in the TIP.

Table 9. Proposed Corridor Design Elements and Space Requirements

Corridor and Classification	Total Pedestrian Zone Width (per side)		# of Travel Lanes	Traveled Way / Lane Width				Center Turn Lane / Median	Default Bikeway Type	On-Street Parking	Total Roadway Width*			Total Right-of-Way Width	
	Pref.	Min.		Min.	Bus Route Min.	Pref.	Max.				Max.	Typ.	Min.	Typ.	Max.
	Smokey Point Blvd Collector/ Arterial	14'		12'	2/4	10'	12'				11'	12'	Standard	Separated bike lanes	N/A
67th Ave NE Arterial	12'	8'	2	10'	12'	10'	12'	Standard	Shared use path or buffered bike lanes	N/A	48'	44'		70'	
204th St NE/ Cemetery Rd Collector/ Arterial	12'	8'	2	10'	N/A*	11'	11'	Standard	Bike lanes/ protected bike lanes	N/A	52'	44'		70'	
E Highland Dr Arterial	12'	8'	2	10'	N/A*	10'	11'	Optional	Bike lanes or buffered bike lanes	Parallel	58'	44'		74'	
SR 531/ 172nd St NE State Route	14'	12'	4	11'	12'	11'	12'	Standard	Separated Bike lanes	N/A	74'	52'		90'	
SR 9/ 177th St NE State Route	12'	8'	2	10'	11'	11'	12'	Optional	Separated bike lanes or shared use path	N/A	56'	50'		74'	
188th St NE Collector	14'	8'	2	10'	N/A*	11'	12'	Optional	Separated bike lanes or shared use path	Parallel	52'	34'		70'	

* This corridor is not served by fixed-route bus service.

Table 10: Proposed Roadway Operational Parameters

Street Type	# of Travel Lanes	Target Speed (miles per hour)	Corner Radii		Typical ADT
			Pref.	Max.	
Smokey Point Blvd	2/4	30	15'	30'	10,000 to 25,000
67th Ave NE	2	25	5'	15'	<3,000
204th St NE/Cemetery Rd	2	25	5'	15'	<5,000
E Highland Dr	2	25	5'	20'	<3,000
SR 531/172nd St SE	4	30	15'	30'	10,000 to 25,000
SR 9/177th St SE	2	25	15'	25'	1,000 to 15,000
188th St SE	2	25	5'	15'	<3,000

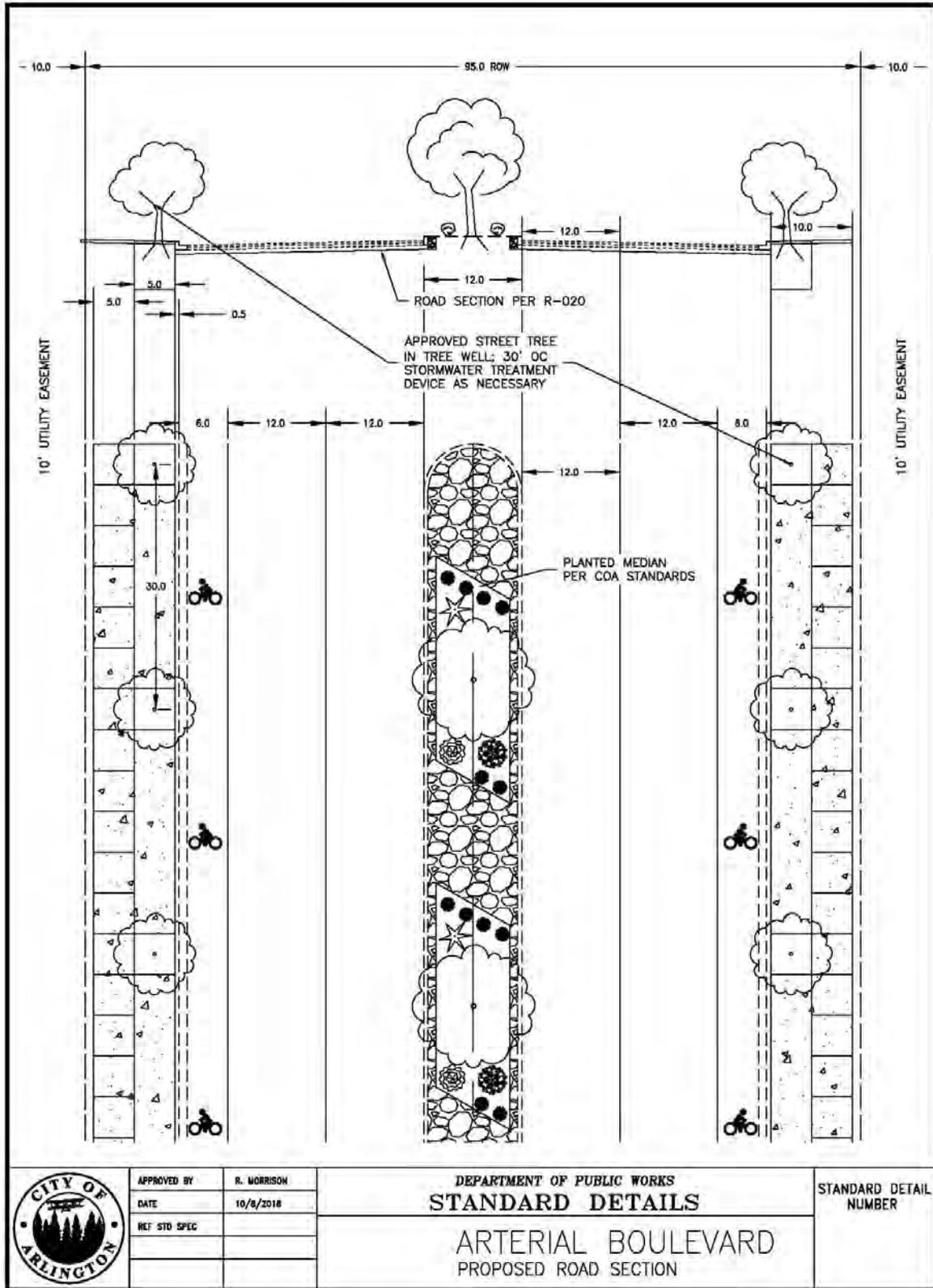


Figure 12. Proposed Road Section: Arterial Boulevard

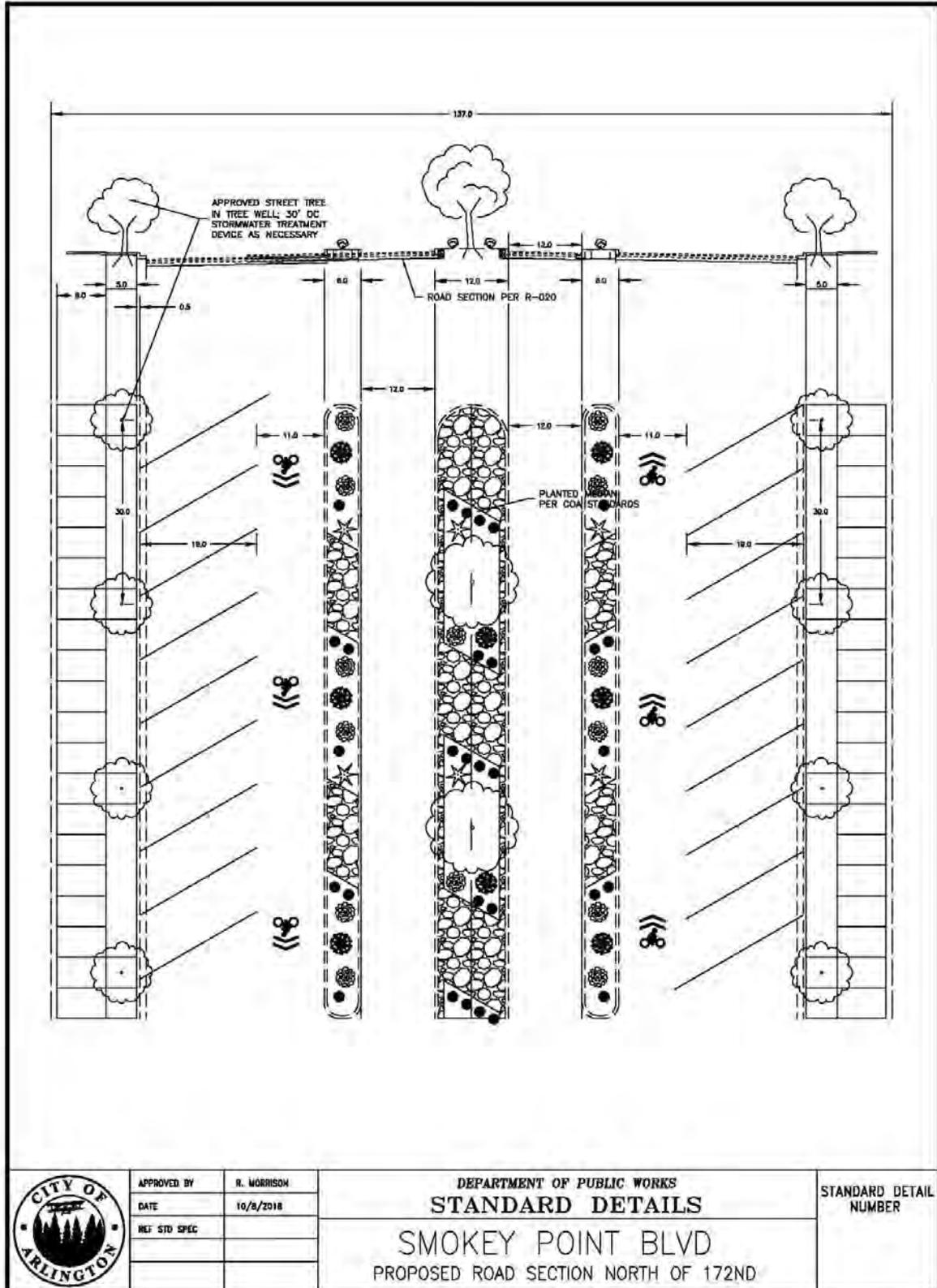


Figure 14. Proposed Road Section: Smokey Point Blvd, north of 172nd

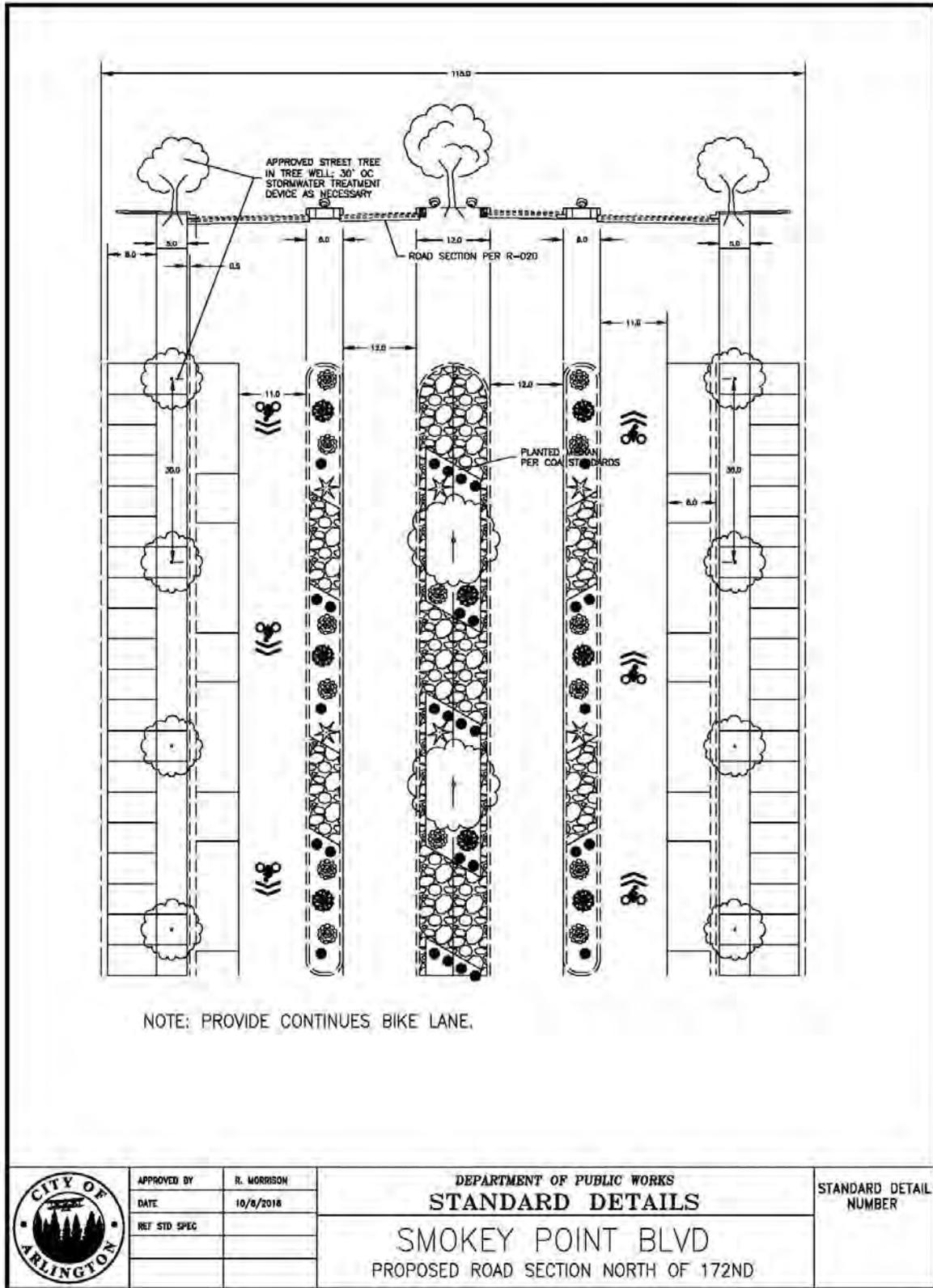


Figure 15. Proposed Road Section: Smokey Point Blvd, north of 172nd

3.2 Roadway Design Criteria Footnotes and Clarifications

The following numbered sections provide additional guidance on roadway design criteria from the tables above.

3.2.1. Pedestrian Zone Width

- Per side of street. Measurement includes sidewalks (6-foot minimum) and buffer. The City’s existing standards R-010 and R-020 indicate a 5-foot sidewalk and 5-foot minimum buffer; the additional width indicated embodies a Complete Streets approach to accommodating pedestrians for safety and comfort. A minimum buffer of 2 feet within the -6-foot minimum allows for signs, hydrants and utility poles, and luminaires to be placed out of the traveled way. Street trees require a 6 feet minimum planting strip for rooting and if feasible can provide space for roadway specific low impact development facilities such as swales or stormwater planters.
- Intersections should remain clear of amenities for the entire width of the pedestrian zone to allow for maximum visibility to and for the pedestrians approaching to cross the street. The clear zone is typically 20 feet from a signalized intersection and 30 feet from a stop-controlled intersection.

3.2.2 Number of Travel Lanes

- Specified number of travel lanes represents the default or typical configuration, and includes two-way center turn lanes. Street designs can deviate if allowed by unique context or constraints. Thorough documentation should be provided for any deviations.

3.2.3 Travelway /Lane Width

- The bus route minimum width applies to outside lane on bus routes.
- The maximum lane width may be used on truck routes.



*To determine whether to provide a shared-use path or separated bike lane, consider pedestrian and bicycle volumes or, in the absence of volume, consider land use.
 **Advisory bike lanes may be an option where traffic volume < 4KADT

Figure 16: Bicycle Facility Selection

3.2.4 Center Turn Lane / Median

- Center turn lanes and medians increase crossing distances for pedestrians on pedestrian-oriented streets; they also consume right-of-way that could otherwise be used for pedestrian realm improvements. To facilitate intersection operations, on-street parking can be removed to allow left turn lanes as needed to maintain LOS E or better during peak periods.
- Center turn lanes or medians are recommended for any roadway with two or more through lanes in each direction.
- Pedestrian islands or pedestrian refuges can be used to assist with pedestrian access across wider arterials with medians.
- On streets in which a median is not preferred or optional, it may still be beneficial to provide crossing islands or non-continuous centerline traffic-calming islands in certain locations.



Figure 17: Bicyclist Types and Preferences

3.2.5 Default Bikeway Type

- Motor vehicle traffic volume and speed are critical contextual considerations for bicyclist safety and comfort. Proximity to motor vehicle traffic is a significant source of stress, safety risks, and discomfort for bicyclists, and corresponds with sharp rises in crash severity and fatality risks for vulnerable users when motor vehicle speeds exceed 25 miles per hour. Furthermore, as motorized traffic volumes increase above 3,000 vehicles per day, it becomes increasingly difficult for motorists and bicyclists to share roadway space.
- From a bicycling perspective, people vary considerably in terms of traffic stress tolerance, which is defined as comfort, confidence, and willingness to interact with motor vehicle traffic. Research⁵⁰ indicates that people fall into one of the four categories shown below. The largest group (51 percent) has a low tolerance for interacting with motor vehicle traffic. As such, the type of bikeway facility and amount of separation from motor vehicle traffic will largely determine whether the bikeway will be used by most of the population or only by a smaller portion that is comfortable interacting with motor vehicle traffic.
- There may be conditions under which it is infeasible to provide bicycle facilities that are sufficiently comfortable for most people. These limiting conditions could include

funding shortfalls associated with right-of-way acquisition or budget limitations. Under these conditions, it may be necessary to select the next-best facility type, which may have less separation between bicycle and motor vehicle traffic than the ideal facility. If this decision is made, the designer and project team must document the decision and the constraints that led to the facility type downgrade. If a downgraded facility is selected, it is important to be aware that it may accommodate more confident or experienced bicyclists but will likely be uncomfortable for most of the population.

- If the Arlington Bike Improvement Plan (Appendix F) or any future bike plans specify a bikeway facility that differs from the default facility shown in the table, then the facility which provides the highest level of comfort (i.e., lowest level of traffic stress) for bicyclists should be provided.
- The default bikeway type indicates the type of bikeway that is typically appropriate for the street type. For the purposes of these corridor, a standard bike lane is assumed to be 5-foot minimum wide and buffered and separated bike lanes are assumed to be 7-foot wide (5-foot lane and 2-foot buffer). Designers should consider traffic speeds and forecasted volumes of each individual project when selecting a bikeway; additional width in either the bike lane or buffer may be desirable depending on the context of the street. Figure 16 illustrates the baseline

⁵⁰ Dill, J. and N. McNeil. (2013, January) "Four Types of Cyclists? Examining a Typology to Better Understand

Bicycling Behavior and Potential." Paper presented at the Annual Meeting of the Transportation Research Board.

optimal bicyclist accommodations for the projected traffic context of the street. The speed and volume thresholds shown correlate with a Level of Traffic Stress rating of LTS2.

- Bike lanes are the preferred facility type when traffic volumes are between 3,000 to 6,000 vehicles/day and posted speeds are 25 to 30 mph. Within this range, buffered bike lanes are preferred to provide spatial separation between bicyclists and motorists, especially as volumes or speeds approach the limits. Bike lanes should be a minimum of 6 feet wide where adjacent to on-street parking. Bike lanes may be 5 feet wide where on-street parking does not exist or in constrained environments.
- Separated bike lanes and shared use paths are the preferred facility type as traffic volumes exceed 6,000 vehicles/day or vehicle speeds exceed 30 mph. However, because many higher-traffic streets (especially Thoroughfares) have very constrained rights-of-way, it may be infeasible to provide these facilities. In constrained corridors, the solution will often be to provide parallel routes or Bicycle Boulevards on lower-traffic streets.
- Sidepaths (shared use paths along roadways) may be acceptable design solutions in lieu of separated bike lanes in land use contexts where pedestrian volumes are relatively low and are expected to remain low. The sidepath may be located on one or both sides of the street, depending upon bicycle and pedestrian network connectivity needs. As volumes increase over time, the need for separation should be revisited. Where land use is anticipated to add density over time, right-of-way should be preserved to allow for future separation of bicyclists and pedestrians. ⁶Default On-Street Parking:
- The table indicates the typical treatment of on-street parking for the designated corridors.
- The default width for parallel parking lanes is 7 feet. Wider (8-foot) lanes may be appropriate in industrial areas, to

accommodate trucks. Decisions regarding parking lane width when adjacent to bike lanes should consider the amount of parking, parking turnover rates, and vehicle types. When parallel parking and bike lanes are provided adjacent to each other, the minimum combined width of the two is 15 feet, with 15 feet preferred.

3.2.6 Target Speed

- Target speed is the speed at which people are expected to drive and is determined for each street based on context, the street type, and the street’s role within the transportation network. The target speed is intended to become both the design speed and the posted speed limit. Per the Institute of Traffic Engineers (ITE; *Designing Walkable Urban Thoroughfares: A Context Sensitive Approach*, 2010), the target speed should be set at “the highest speed at which vehicles should operate on a thoroughfare in a specific context, consistent with the level of multimodal activity generated by adjacent land uses to provide both mobility for motor vehicles and a safe environment for pedestrians and bicyclists.” In other words, target speeds—and by extension posted speed limits and design speeds—should balance the needs of all anticipated street users based on context.



Source: Tefft, Brian C. *Impact speed and a pedestrian’s risk of severe injury or death. Accident Analysis & Prevention*. 50. 2013

Figure 18: Speed and Pedestrian Crash Severity

Four Types of Speed



Figure 19. Four Types of Speed

The speed that people should drive

Target speed is the ideal speed for a street and is determined for each project based on context and the role of the street in the multimodal transportation network. Target speed guides the selection of design speed.

Tool to determine the design of the roadway

Design speed is used to determine the design of geometric features of the roadway, which ultimately determines the speed at which people drive. **Design speed should generally be selected so that the resulting prevailing speed matches the target speed.**

The speed most people drive at or below

Prevailing speed is defined as the speed at which the majority of people (85 percent) are driving at or below. Prevailing speed is largely determined by the design of the roadway.

The legal maximum speed

The speed limit should match the target speed but is also dependent on the prevailing speed. Lowering speed limits without also making changes to the roadway or traffic control (i.e., lowering the design speed) is often ineffective at slowing traffic. FHWA’s *Methods and Practices for Setting Speed Limits: An Informational Report* describes methods for setting speed limits.

3.2.7 Corner Radii

- Small corner radii are an effective way to make design speed match target speed. Large radii are associated with higher design speeds and small radii are associated with lower design speeds.
- The values in this column refer to the actual radii of curb returns. In many cases, the effective corner radii—the curve which motor vehicles follow when turning—will be significantly greater than these values. For example, a street with a 5-foot curb return and on street parking and bike lanes may have an effective corner radius of more than 25 feet.
- Small curb radii benefit pedestrians by creating sharper turns that require motorists to slow down, increasing the size of waiting areas, allowing for greater flexibility in the placement of curb ramps, and reducing

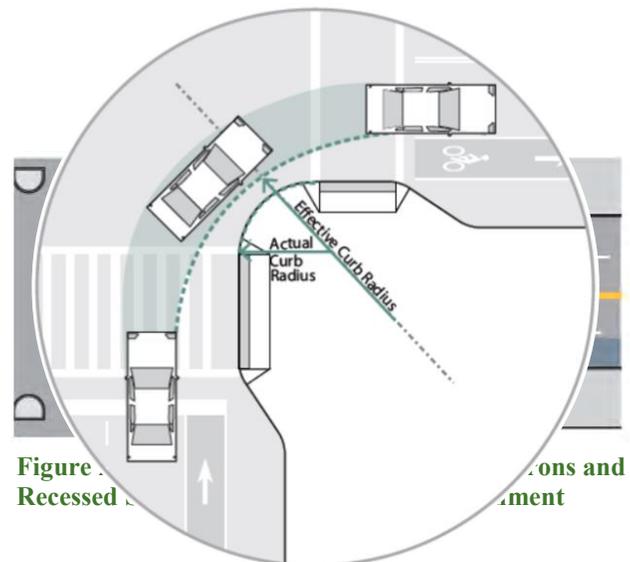


Figure 20: Actual and Effective Curb Radii

pedestrian crossing distances. Ideally, the curb radius should be as small as possible while accommodating the appropriate design vehicle for the intersection.

- Not all curb radii need to be the same along a corridor, or even within an intersection. Accommodations should be made for bus routes and freight routes only where needed.
- At locations where a significant number of trucks, buses, and other large vehicles make right-hand turns, consider solutions that allow the corner radii to remain small for traffic calming and pedestrian safety. Effective corner radii can be increased for large vehicles through the provision of truck aprons, which retain the traffic-calming effect of smaller corner radii for passenger vehicles. Planning for lane encroachment can also allow corner radii to remain small. Specific applications include:
 - At signalized intersections, corner design should assume that a large vehicle will use the entire width of the receiving lanes on the intersecting street. Where additional space is needed to accommodate large vehicles, consideration can be given to recessing the stop bar on the receiving street to enable the vehicle to use the entire width of the receiving roadway (encroaching on the opposing travel lane).
 - On low-volume (less than 4,000 vehicles per day), two-lane streets, corner design should assume that a large vehicle will use the entire width of the departing and receiving travel lanes, including the oncoming traffic lane.
 - In some cases, it may be possible to allow a large turning vehicle to encroach on the adjacent travel lane on the departure side (on multi-lane roads) to make the turn.
 - The values in this column assume that right-turn slip lanes are not present. If a radius over the maximum value for a corridor is deemed necessary, a right-turn slip lane should be provided and a refuge (or “pork chop” island) should be included. The design of right-turn slip lanes should create a 55 to 60-degree angle between motor

vehicle flows and should either be stop-controlled or have a raised crossing.

3.2.8 Typical ADT

- The values in this column represent the typical average daily traffic volume (ADT) compatible with each type. Traffic volumes higher or lower than the typical value may be appropriate depending on context and ability to adequately control speeds and maintain operational efficiency. Note that traffic volumes also influence how safe and comfortable a roadway is for biking. A traffic study should be performed for streets nearing the upper limits of these ranges.

3.3 Supporting Transit in Complete Streets

Community Transit operates on several of the designed Complete Streets corridors as noted in Table 9. Due to the size and operational characteristics of buses, it is often necessary to adjust the geometric design, pavement markings, or traffic control of a street to accommodate transit effectively. However, some of the design treatments to accommodate transit (e.g., wider lanes or larger corner radii at intersections) may have an “anti-traffic calming” effect of encouraging higher passenger vehicle speeds. As such, transit-accommodating design treatments should be applied only where transit operates or may operate in the future and are not applied wholesale to the street typologies in the Complete Streets Policy.

Case-by-case design flexibility is incorporated into the Complete Streets design process and will apply to bus routes by shifting design parameters to accommodate transit. This may include wider lanes, larger corner radii, lane encroachment areas, alternative bikeway treatments, and more. The design parameters for each street type include ranges of values, which in most cases will provide satisfactory results for transit. In cases where values outside of the parameters are necessary or desirable to accommodate transit, the design engineer should consider and balance the needs of all modes while emphasizing the safety of all users, especially pedestrians and bicyclists.

3.3.1 Bus Stops and Bikeways

Transit stops should be safe and efficient for all users, with minimal negative impacts on transit operations. One area of particular interest is the design of bus stops located along bike lanes and separated bike lanes. The goal in these locations is to reduce conflicts and minimize delays. Bus stops should be provided curbside (against a curb) in most instances, as this is the most functional location for a bus stop. Designs that require passengers to cross bike lanes when boarding or alighting should be avoided. Designs that require buses to pull out of the flow of motorized traffic are also not desirable.

Based on common roadway and bikeway configurations, transit operations, and other considerations, two primary bus stop designs exist (with multiple variations possible):

- Conventional Bus Stop with Interrupted Bike Lane (bus enters/crosses bikeway)

- Floating Bus Stop (bikeway is directed behind passenger waiting area)

3.3.2 Conventional Bus Stop with Interrupted Bike Lane

Conventional bus stops with interrupted bike lanes are traditional curbside bus stops adjacent to an on-street bikeway. At these stops, buses enter or cross the bike lane to pull to the curb. Bike lanes can have solid or dashed lines and green pavement can be used to increase awareness of potential conflicts. When a bus is blocking the bike lane, bicyclists stop and wait until the bus proceeds, or merge into the motor vehicle travel lane.

Conventional bus stops with interrupted bike lanes require less space than floating bus stops but provide less separation between buses and bicyclists. This type of stop is best utilized at locations with lower boarding/alighting levels and/or on streets with lower speed and lower volume traffic.

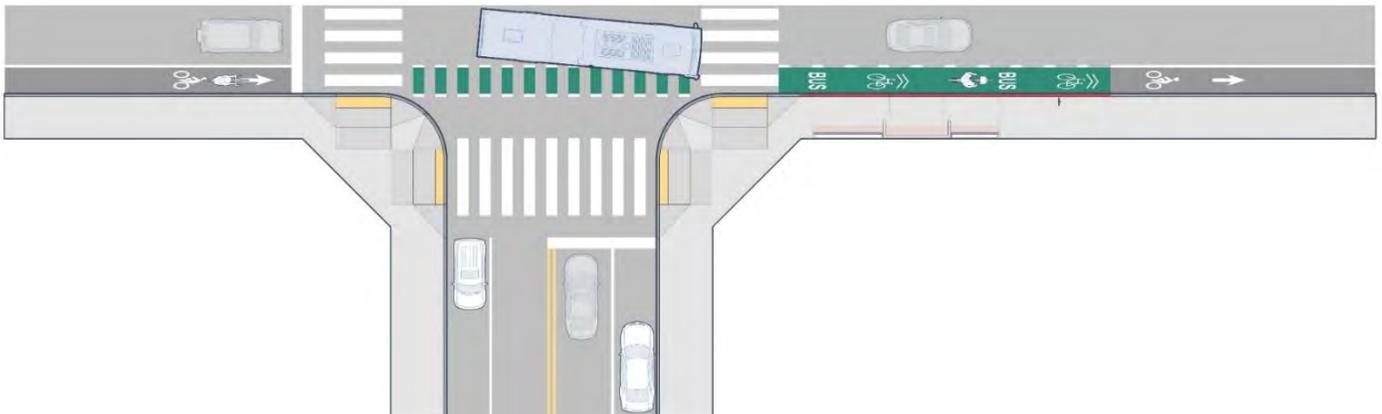


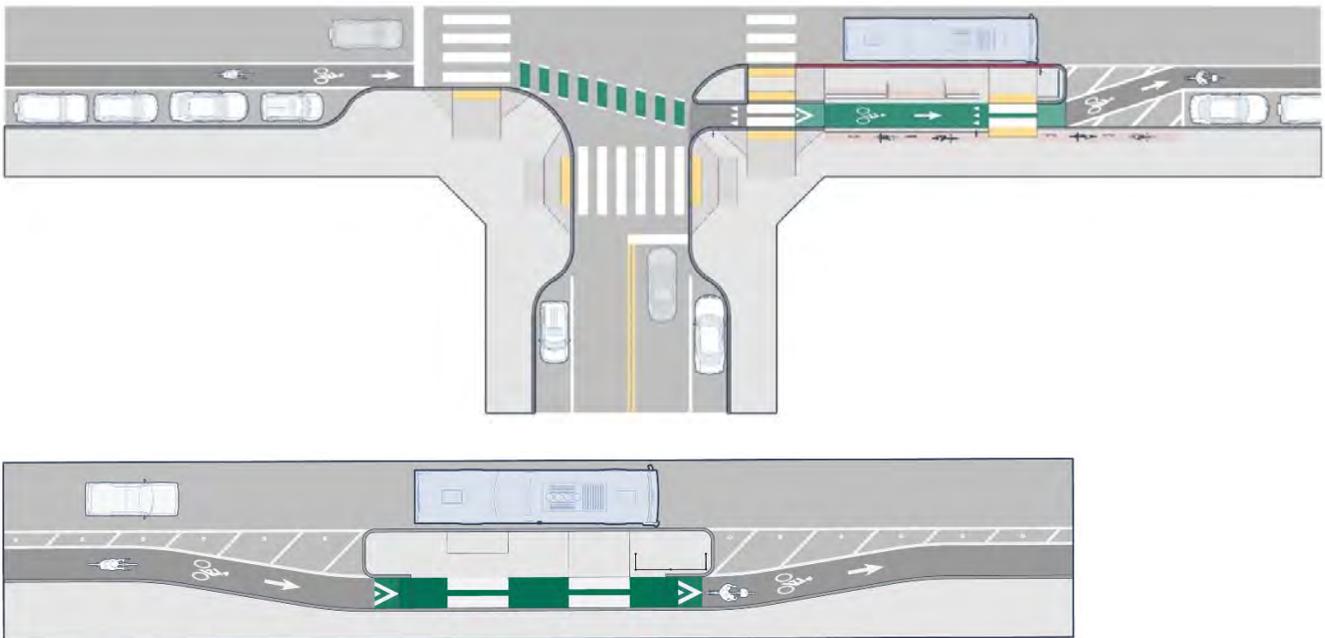
Figure 21: Example Conventional Bus Stop with Interrupted Bike Lane

3.3.3 Floating Bus Stops

Floating bus stops are sidewalk-level platforms built between the bikeway and the roadway travel lane. Floating bus stops direct bicyclists behind the bus stop, reducing or eliminating most conflicts between buses and bicyclists, and expanding available sidewalk space. By eliminating bus and bicyclist interaction, floating bus stops have safety benefits for bicyclists. This design can also benefit pedestrians, as the floating bus stop doubles as a pedestrian refuge, which if designed efficiently, can shorten crossing distances and enable shorter signal cycles. It also allows for a space for pedestrians to wait for the bus outside of the bike facility. This design includes ADA facilities and measures to ensure that transit access is maintained for all users.

Floating bus stops are recommended for use with separated bike lanes and can also be used with standard and buffered bike lanes.

Figure 22: Examples of Floating Bus Stops at Intersections and Midblock Locations



3.4 Supporting Pedestrians in Complete Streets

3.4.1 Pedestrian Zone Design Criteria

The function and design of the pedestrian realm significantly impacts the character of each street. Extending from curb to building face or property line, this area includes sidewalks, street trees, street furniture, signs, low impact development (LID) street lights, bicycle racks, and transit stops. They are places of transition and economic exchange as restaurants engage the public space and retailers attract people to their windows and shops.

The following sections provide additional guidance on pedestrian zone design criteria.

3.4.2 Frontage Zone

- The Frontage Zone is the area of the pedestrian realm (usually paved) that immediately abuts buildings along the street. In residential areas, the Frontage Zone may be occupied by front porches, stoops, lawns, or other landscape elements that extend from the front door to the sidewalk edge. The Frontage Zone of commercial properties may include architectural features or projections, outdoor retailing displays, café seating, awnings, signage, and other intrusions into or use of the public right-of-way. Frontage Zones may vary widely in width from just a few feet to several yards.
- The Frontage Zone is measured from right-of-way limit to the edge of the Clear Zone.
- Where buildings are located against the back of the sidewalk and constrained situations do not provide width for the Frontage Zone, the Clear Zone needs to accommodate a buffer from the building façade.
- Wider frontage zones are acceptable where conditions allow. The preferred width of the Frontage Zone to accommodate sidewalk cafes is 6 to 8 feet.



Figure 23. Pedestrian Zones

3.5.3 Clear Zone

- Also known as the “walking zone,” the Clear Zone is the portion of the sidewalk space used for active travel. For it to function, it must be kept clear of any obstacles and be wide enough to comfortably accommodate expected pedestrian volumes including those using mobility assistance devices, pushing strollers, or pulling carts. To maintain the social quality of the street, the width should accommodate pedestrians passing singly, in pairs, or in small groups as anticipated by density and adjacent land use.
- The Clear Zone should have a smooth surface, be well lit, provide a continuous and direct path with minimal to no deviation, be adequately maintained, and meet all applicable accessibility requirements.
- In locations with severely constrained rights-of-way, it is possible to provide a narrower clear zone. The Americans with Disabilities Act (ADA) minimum 4-foot wide clear zone can be applied using engineering judgement and should account for a minimum 1-foot shy distance from any barriers. If a 4-foot wide clear zone is used, 5-foot wide passing zones are required every 200 feet. Driveway designs meet the criteria of ADA-compliant passing zones.

- For any sidewalk intended to also accommodate bicycle traffic (i.e. shared use path), the clear zone should be a minimum of 10 feet wide, 12 feet preferred for urban areas. For short segments through constrained environments, 8-foot wide shared use paths are acceptable.

3.4.4 Amenity Zone

- The Amenity Zone lies between the curb and the Clear Zone. This area is occupied by elements such as street lights, street trees, bicycle racks, parking meters, signposts, signal boxes, benches, trash and recycling receptacles, and other amenities. In commercial areas, it is typical for this zone to be hardscape pavement, pavers, or tree grates. In residential, or lower intensity areas, it is commonly a planted strip.
- The Amenity Zone can provide a temporary emergency repository for leaves or snow cleared from streets and sidewalks, although snow storage should not impede access to or use of important mobility fixtures such as parking meters, bus stops, and curb ramps.
- Typically, the minimum width necessary to support standard healthy street tree installation is 6 feet. The City's Standard Plans allow for narrower tree pitch depth (4.5 feet minimum) but additional rooting space is recommended.
- Low impact development (LID) is commonly located in the Amenity Zone. LID typically require a minimum of 6 feet of width.
- Utilities, street trees, and other sidewalk furnishings should be set back from curb face a minimum of 18 inches.
- Where on-street parking is not present, a wider Amenity Zone should be prioritized over the width of the Frontage Zone to create a buffer between pedestrians and the travelway.
- The preferred width of the Amenity Zone to accommodate sidewalk cafes that are not adjacent to the building is 6 to 8 feet.
- Curb extensions extend the Amenity Zone and curb into the roadway. The use or function of curb extensions typically mirrors

or complements that of the Amenity Zone and may include stormwater management features, transit stops or passenger facilities, seating, dining, additional landscaped area, or additional pedestrian space.

3.4.5 Total Width

- The minimum total width of the pedestrian zone for any street with transit service is 8 feet (preferably 10 feet) to provide space for a minimum 5-foot wide by 8-foot deep landing zone.

3.4.6 Crosswalks

- By legal definition, there are crosswalks whether marked or unmarked at any intersection location where a sidewalk leads to and crosses the intersection, unless pedestrian crossing is explicitly prohibited.
- Marked crosswalks serve many purposes, including:
 - Acting as a warning device and reminder to motorists that pedestrian conflicts can be expected, especially where an unmarked crosswalk would not be clearly discernable due to peculiar geometrics or other physical characteristics.
 - Pointing out to the pedestrian the safest crossing path.
 - Encouraging pedestrian crossings to at specific locations.
 - Aiding in enforcing crosswalk laws.
 - Discouraging drivers from blocking the pedestrian crossing at intersections.
- By default, marked crosswalks should be located at every signalized intersection (on all approaches); across major cross-streets that intersect designated Complete Streets corridors; and all intersections in business districts/commercial areas, such as Highland Drive. Consider providing raised crosswalks across major cross streets as traffic-calming devices to slow motor vehicle traffic as it enters neighborhoods and pedestrian-oriented districts.
- Crosswalk markings must comply with the MUTCD standards in Section 3B.18. Marked crosswalks should be at least 10 feet wide or the width of the approaching

sidewalk if it is greater. In areas of heavy pedestrian volumes, crosswalks can be up to 25 feet wide. Crosswalks should be aligned with the approaching sidewalk and as close as possible to the parallel street to maximize the visibility of pedestrians while minimizing their exposure to conflicting traffic.

- Standard crosswalk markings, or simple transverse lines at least 6 inches in width, may be used at a minimum at stop-controlled and signalized intersections. High-visibility markings (continental or ladder crosswalks) may be used at any location, but are especially important at midblock crossings, designated school crossings, and near heavy pedestrian generators such as major destinations, transit stops, and parks.
- Decorative crosswalks (brick pavers, colored or textured concrete, or similar materials) are discouraged because they often create accessibility challenges and can require additional maintenance. Decorative materials are more appropriately used in the center of intersections. Locations where decorative crosswalks have been installed should be assessed for visibility, especially at night. Visibility of decorative crosswalks can be improved by adding transverse markings on either side of the decorative pavement, installing pedestrian signs at both curbs, or installing pedestrian lighting.
- Marked crosswalks are a useful traffic control device but they are not the only solution to improving pedestrian crossings. In some cases, a marked crosswalk might not be adequate on its own to increase the safety of pedestrians. Multi-lane intersections with high traffic volumes, longer crossing times, and higher speeds increase the exposure of pedestrians to potential crashes. At these intersections, crosswalk markings can provide increased awareness of the presence of pedestrians, but they may need to be supplemented with pedestrian refuge islands, curb extensions, increased signal cycle length, overhead

illumination, warning signs, etc. to reduce pedestrian exposure.

3.4.7 Midblock Crossings

- At a mid-block location, a marked crosswalk is required to create a legal pedestrian crossing. High-visibility (continental or ladder markings) marked crosswalks are recommended at all midblock crossings, especially those without traffic control. They delineate the crossing location and can help alert roadway users to the potential conflict ahead.
- On roadways with low traffic volumes and speeds where sight distances are adequate, a marked crosswalk should be sufficient to accommodate pedestrians effectively. Additional crossing improvements such as warning signs, Rectangular Rapid Flash Beacons (RRFB), or Pedestrian Hybrid Signals (HAWK signals) are recommended at locations without traffic signals and where any of the following is true:
 - There is a history of pedestrian crashes near the location.
 - The area has high levels of pedestrian activity.
 - The speed limit or 85th percentile speed is greater than 35 miles per hour.
 - The roadway has four or more lanes of travel without a raised crossing island and an ADT of 9,000 vehicles/day or greater.
 - The roadway has four or more lanes of travel with a raised crossing island (either existing or planned) and an ADT of 12,000 vehicles/day or greater.
 - See FHWA's Safety Effects of Marked versus Unmarked Crosswalks at Uncontrolled Locations: Final Report and Recommended Guidelines for additional information and guidance.

3.5 Street Trees and Landscaping

3.5.1 Greenscape and Street Trees

Overview

Trees and landscaping play an important role in making streets comfortable, delightful, memorable,

and sustainable. Used appropriately, they can help define the character of a street. Street tree planting transforms a street’s appearance and produces great benefits with limited funds. Trees add color and shade to the environment and reduce the heat island effect. They separate vehicles from pedestrian pathways, tend to calm traffic, and help the city breathe by capturing carbon dioxide and other gaseous pollutants and particulates.

Street trees require their own allocation of right-of-way to thrive. For technical guidance and standards for on street trees, including installation procedures and on-going maintenance requirements, please refer to City of Arlington Design Standards and Specifications.

Relationship to Context

Landscape and Street Tree design should be mindful of the surrounding landscape character. Street tree plantings should strive to maintain consistent spacing and character along a given corridor or district.

Understory Plantings

The primary concerns regarding understory plantings are pedestrian access, security, visibility, and ongoing cost and ease of maintenance. Consequently:

- Plantings shall conform to zoning requirements, including:
 - Within 30 feet of intersections and corners, plants must not exceed 12 inches.
 - Other plants must not exceed a height of 36 inches.
- Plants should be selected and/or maintained in such a way that there is no overhang or encroachment onto the sidewalk, curb or street area.

trees are not to be used as street trees.

Table 11. Tree Spacing Recommendations

TREE SIZE	Spacing between trees
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- When placed adjacent to on-street parking, plants should be located away from ‘door zone’ of parked cars, typically 3 feet from the curb, or if planted behind a sidewalk, 3 feet from back of sidewalk.
- For plantings being used for green infrastructure, species should be tolerant of both dry and saturated conditions.
- Plantings should be selected and planted as to not interfere with street tree health.
- Plantings should be drought tolerant.
- Annuals are not discouraged from being used within the ROW, however, they require a long-term commitment from the organization planting them. Without that commitment, perennial plantings should be used.
- Irrigation may be considered in conditions where there is limited ability to capture adequate rainwater and will require an ongoing maintenance agreement or where there is the desire to include plant material that is less drought tolerant. In most cases, it is beneficial to include temporary irrigation for establishment or ‘quick-coupler’ hose bibs to allow watering during times of extreme drought.
- In most cases, it is optimal to use native or regionally adapted plant material.

3.5.2 Street Tree Planting

Species diversity is important to the long-term-health of the City’s urban forest and can be facilitated by selecting two or more tree types to plant along a street. Trees come in a wide variety of shapes and sizes. The City’s [Street Tree List](#) provides a list of recommended tree species ranging from large shade trees to small ornamentals. Species with similar characteristics are grouped; when planted along a street, they provide visual continuity to the street segments while allowing for horticultural diversity. Evergreen

<i>Trees that have a maximum height of 25 feet can be used under power lines or where overhead clearance is a factor.</i>	
Small (spreading)	30 feet
Small (columnar)	30 feet
<i>Canopy/Shade trees that have a minimum height of 30 feet at maturity and provide a significant canopy over the street and adjacent properties.</i>	
Medium (columnar)	30 feet
Medium (spreading)	45 feet

Boulevard: 50 feet	50 feet
Specialty	Determined by director

Table 12. Tree Clearance Recommendations

	CLEARANCE
Distance to curb	3 feet at planting time
Distance to parking lot pavement edges	4 feet at planting time
Distance to power pole	10 feet
Distance to fire hydrant	5 feet
Distance to water meter box	10 feet
Distance to street light	15 feet
Distance to commercial or industrial driveway	15 feet
Distance to alley right-of-way	10 feet
Distance to street intersection	30 feet
Distance to stop sign	15 feet
Clearance over public sidewalk	8 feet
Clearance over public street	14 feet

3.5.3 Other Design Considerations

- **Minimum Tree Size:** It is important to note that for urban streetscapes, larger caliper size trees may be necessary to keep tree limbs high enough off the ground to maintain ADA accessibility.
- The distance between the curb and the sidewalk should be at least 6 feet (although 8 feet is preferred) to support a tree and provide enough space for the trunk and roots.
- Best management practices recommend that for every 1 square foot of mature canopy cover, 2 feet of cubic soil be provided to support tree growth and root development. Shade trees, require a min. of 400 CF of soil area. And for very large trees, along boulevards for example, a minimum of 1000 CF should be provided to achieve optimal canopy size⁵¹. Soil Depth should be at least 36” for large shade trees.
- In constrained areas that prioritize pedestrian pavements over planting area, there are several techniques that may be used to expand the available root zone for a street tree, including:
 - Providing structural soil under pavements,
 - Use a structural cell system to support pavements to provide a large volume of available, uncompacted and amended soil while minimizing restrictions on pedestrian access.
 - Providing adjacent green space areas for root development, and
 - Providing paths for roots under pavements in to encourage trees to reach available root space on the opposite side of the sidewalk.
- Pedestrian traffic and vehicle access through the Planting/ Furnishing Zone can cause soil compaction which impacts soil structure and tree health.
- Where traffic is minimal, boulevards should be covered with mulch, turf grass, or ornamental plantings. A mulch ring around the tree retains soil moisture, cools soils,

⁵¹ ‘Soil for Urban Tree Planting’, E. Thomas Smiley, Ph. D,

prevents soil compaction, and reduces maintenance.

- Permeable hardscape, such as pavers, may be used in commercial area Planting/Furnishing Zones to limit soil compaction where there is higher pedestrian traffic. When using pavers, a structured soil must be used, and an opening of several inches should remain around the trunk to allow for tree growth.
- Adjustable tree grates are generally not considered a best practice but may be considered in select situations with the approval of the City.

by a certified arborist (recommended every 1-2 years) to assess the condition of the tree and determine the presence of any disease or damage that could lead to failure of the tree.

3.5.4 Installation and Maintenance

Because trees are living infrastructure, proper installation, care, and maintenance are required to maximize the investment. City of Arlington Standard Plans provide recommendation for installation standards.

Soil condition, along with soil volume, is the primary determiner of future plant health. Even in areas with adequate soil volume, if the soils have been compacted due to construction activities, trees can struggle to flourish. In construction zones, or areas that have been compacted due to other activities, it is recommended for all areas planted with trees or understory plants, that the soils be ripped or tilled to a depth of 12” or deeper.

As trees grow to maturity, it is important to prune them to accommodate pedestrians and vehicles along the street. Per the City’s standard details, a 7-foot clearance above sidewalks and a 14 feet clearance above streets is required. Selecting trees with ascending or vase-shaped mature canopies rather than broad or pyramidal forms, will help alleviate the need for pruning. Choosing trees with strong, undamaged leaders (which is the top-most vertical branch) will help ensure that the tree will grow with appropriate forms. Trees with damaged or ‘split’ leaders will tend to grow more horizontally and may have weak structures prone to splitting when mature.

For established street trees, standard maintenance consists of structural pruning on a regular cycle (typically every 3-5 years depending on the species, size, and location of the tree) and regular inspection

3.6 Low Impact Design Guidelines

Using Low Impact Design (LID) within the right-of-way can provide multiple solutions for the City. Beyond treating and retaining stormwater where it falls, LID elements add aesthetic diversity, help create a sense of place, and show citizens that our natural resources matter. The City has several subsurface scenarios along the main corridors, and each scenario lends itself to specific LID facilities:

3.6.1 High Infiltration, Low Groundwater

Under this ideal subsurface scenario, numerous LID facilities could be feasible. Selection will depend upon geometry, space available, and types of users within each corridor.

Permeable Pavement: Permeable pavements include porous asphalt, pervious concrete, permeable pavers, and grid systems. Porous asphalt, pervious concrete, and permeable pavers would all be suitable for sidewalk and shared use path applications in high infiltration, low groundwater locations. Permeable pavements can accommodate additional run-on flows from adjacent areas, provided stormwater pollutants and sediment run-on can be limited. Geometric considerations include maximum longitudinal slopes (5 percent for porous asphalt, and 12 percent for pervious concrete and permeable pavers). Modern porous asphalt mix designs provide a smoother wearing course suitable for all types of users.

Bioretention: Bioretention options include cells, swales, planters, and planter boxes. In a high infiltration, low groundwater location, cells, swales, or planters would be suitable for stormwater infiltration. Size of contributing area and geometric considerations generally dictate the type of bioretention selected. Steep longitudinal slopes lend themselves to swales or connected planters but may require check dams or weirs. Cells and swales require at least seven feet of width within the right-of-way using 3H:1V side slopes; rockery side slopes or concrete planters can be used in narrower spaces. In facilities adjacent to roadways, cells or swales with bottom depths more than 4-feet below the roadway require a guard rail.

3.6.2 High Groundwater

Permeable Pavement: Permeable pavement may still be used in high groundwater locations if the vertical separation from the bottom of the aggregate base to the winter groundwater elevation is at least 1 foot. Pervious concrete and permeable pavers can have facility depths as shallow as 1 foot for pedestrian uses.

Bioretention: Bioretention cells, swales, or planters may still be used in high groundwater locations if the vertical separation from the bottom of the bioretention bioretention soil media (or the bottom of the underdrain aggregate) to the winter groundwater elevation is at least 1 foot for contributing areas of less than 5,000 sf of pollution-generating impervious surface, less than 10,000 sf of impervious area, or less than $\frac{3}{4}$ acre of lawn and/or landscaped area. Greater contributing areas should have at least 3 feet of vertical separation. Separation distance can be increased by decreasing the ponding depth and increasing the facility footprint.

3.6.3 Poor Infiltration

Permeable Pavement: Locations with poor infiltration rates may require under drains to prevent degradation of the native soil subgrade due to periodic saturated conditions. If the native soil subgrade can withstand saturated conditions, an elevated drain can be used to protect the pavement wearing course from saturation. Permeable pavements can be used in locations of very poor infiltration by utilizing an impermeable liner and under drains.

Bioretention: Bioretention planter boxes are ideal for locations of poor infiltration, because their solid bottoms do not rely on infiltration to the native soil. Planter boxes can provide water quality treatment, but only limited flow control. Underdrains below cells, swales, or planters can also be used in locations of poor infiltration to provide water quality, but only limited flow control.

3.7 Street Element Priorities

Many street projects are subject to tradeoffs. Whether limited by budget, available right-of-way, or operational challenges, relatively few street projects in developed portions of the city can

provide optimal operating spaces for all modes while also supporting urban design and placemaking goals. When tradeoffs are required, they are made based on priorities for each street type. The result is street designs that safely accommodate all users within the constraints of the specific project or location and achieve the multimodal goals of the project.

Feasibility is typically assessed during the conceptual design phase of the project development process, at which time tradeoffs are also made.

Table 13 provides guidance for designers when weighing tradeoffs. Judgments regarding the

inclusion of certain design elements (e.g., bike lanes) or where to allocate additional width where right-of-way allows should be based on the priorities outlined in this table depending on street type.

User safety is paramount and a minimum accommodation or reasonably-convenient alternative route for people biking and walking is required for every street project. Features that are indicated to be medium or lower priorities should not be dismissed from inclusion unless constraints make it infeasible to include all default elements for the street type.

Table 13: Street Element Priorities

Corridor	Pedestrian Realm & Crossings						Roadway				
	Frontage Zone	Pedestrian Clear Zone	Amenity Zone	Curb Extensions, Parklets, and other Buffers	Crossing / Refuge Islands	Marked Crosswalks*	Traveled Way / Lane Width	On-Street Parking	Dedicated Bikeway	Median / Center Turn Lane	Traffic Calming / Speed Management Features
Smokey Point Blvd	H	H	M	L	M	H	H	NC	M	H	L
67 th Ave NE	H	H	H	H	L	H	L	H	L	M	H
204 th St NE/Cemetery Rd	H	H	M	H	M	H	L	M	H	M	M
E Highland Dr	H	H	H	H	L	H	L	H	L	M	H
SR 530/172 nd St SE	M	H	H	L	H	H	H	L	M	H	L
SR 9/177 th St SE	L	H	M	M	H	H	M	L	M	H	M
188 th St NE	H	H	H	H	L	H	L	H	L	M	H

H Higher Priority **M** Medium Priority **L** Lower Priority **NC** Not Compatible

*Marked Crosswalks are a high priority in school zones, regardless of street type.