City of Fairfax

Mosby Woods Floodplain Improvements Study Grant Request

2022 Virginia Community Flood Preparedness Fund (Round 3) Application Package

Introduction

The City of Fairfax (City) has prepared this 2022 Virginia Community Flood Preparedness Fund (CFPF) Application Package to request matching funds for the preparation of the Mosby Woods Floodplain Improvements Study. The City intends to apply for matching funds in the Study category. The City of Fairfax is a 6.27 square mile independent city located within Fairfax County in northern Virginia. The City is highly developed and is mainly compromised of residential and commercial lots. The City and study location have a low social vulnerability index score based on the ADAPT VA Social Vulnerability Index.

Background

The City of Fairfax is bisected by a multitude of stream reaches and acts as the headwater of Accotink Creek. As the City has evolved, it has naturally experienced large-scale development with the majority of its land draining to the north fork or the mainstem of Accotink Creek. This situation has led to locations of increased localized urban flooding. The City is now looking to conduct a study to evaluate the effects of the north fork of the Accotink Creek floodplain on the Mosby Woods condominiums, as well as develop strategies to prevent and mitigate damages from the riverine flooding. It is currently anticipated that the culvert system below Stafford Drive does not provide sufficient capacity and causes large storm events to back up, spilling onto neighboring properties. The drainage area and location of the Stafford Drive culvert system can be seen in Attachment 1.1.

The study will look to analyze the existing condition of 6,000 linear feet of Accotink Creek and the effects of the stream on floodplain on the adjoining infrastructure. The hydrology to the point of interest will be derived from a compilation of the most readily available aerial landcover data, survey data, GIS shapefile data, and soils data. The study will utilize the full build out condition from the City's 2035 Comprehensive Plan to increase resilience of future events. Additionally, the study will model the historic flows related to the rainfall and runoff from Tropical Storm Lee, a known flooding event at the Mosby Woods condominiums.

The study will then perform a floodplain sensitivity modeling analysis for infrastructure changes at the major culvert systems, stream, and the use of floodplain grading techniques within the study area. Evaluation of the overall stream corridor will be prioritized as to model the effect of the changes wholistically on the floodplain system, as to not potentially transfer any flooding downstream. Utilizing the study results, the City will have a comprehensive evaluation of the localized flooding within the study area and the impacts that different potential solutions could have on the floodplain.

Scope of Work Narrative

Capacity Needs

The City, in conjunction with an engineering consulting firm, will develop the Mosby Woods Floodplain Improvements Study. The City currently lacks the capacity or in house expertise to undertake this effort singularly and thus outside resources are required for the completion of this task.

Goals and Objectives

The goal of the Mosby Woods Floodplain Improvements Study is to provide a corridor-wide approach to better understand the flooding within the Accotink Creek. This planning level document will provide the City with the ability to better assess and develop an action-oriented approach to flooding and resiliency within the Mosby Woods community.

Stakeholders

Initially, the stakeholders associated with the Mosby Woods Floodplain Improvements Study will primarily be the City Department of Public Works. As items and projects identified in the study come to fruition, an expansion of the stakeholders will include citizens, businesses, and residents within the Mosby Woods community.

Implementation Plan and Timeline

The implementation of this plan will start once the grant has been awarded to the City and when the new fiscal year begins in July 2022. The City would like to note this is an anticipated timeline and could be subject to change.

Outputs and Measures

The output of this task is a comprehensive evaluation of the localized flooding within the study area and the impacts that different potential solutions could have on the floodplain. No other outputs are expected from this task.

Maintaining Capacity

At this time, the City does not anticipate the need for continuing support for development of the Mosby Woods Floodplain Improvements Study.

Budget Narrative

Estimated Total Project Cost

The estimated total project cost for the development of the Mosby Woods Floodplain Improvements Study is $48,570.66. The City has coordinated with a consultant to provide an estimated summary of proposed services and associated cost. This document has been included in Attachment 1.2 and includes an hourly breakdown based on anticipated tasks to be

conducted by a consultant in the development of the Mosby Woods Floodplain Improvements Study.

Amount of Funds Requested

Per the 2022 CFPF Manual, the Mosby Woods Floodplain Improvements Study development is categorized as a Study activity. According to the latest U.S census data, the City of Fairfax has a median household income of $116,979. This is 58% higher than the Virginia median household income of $74,222 thus not qualifying as a low-income geographic area. The U.S census data can be seen in Attachment 3.7 of this application package.

Per the 2022 CFPF Manual, the City is requesting a 50% City match and a 50% CFPF match of the total project cost. Based on the Estimated Total Project cost highlighted above, the City is requesting $24,285.33 with this grant application package. This match will be utilized to assist with the overall cost of developing the Mosby Woods Floodplain Improvements Study. As mentioned above, an estimated summary of proposed services and associated cost has been included in Attachment 1.2. This includes an hourly breakdown based on anticipated tasks to be conducted by a consultant in the development of the Mosby Woods Floodplain Improvements Study.

Amount of Cash Funds Available

The City intends to allocate a portion of the City of Fairfax Stormwater Utility Fund for this study. The study has been included within the approved 2023 proposed budget as “Flood Mitigation Planning & Resilience”, which has an available budget of $225,000. The City has reserved $24,285.33 of available matching funds from the City of Fairfax Stormwater Utility Fund as part of this application package. The Flood Mitigation Planning & Resilience project sheet from the 2023 proposed Stormwater Utility Fund can be seen in Appendix 1.3. The Stormwater Utility Fund is available to the City’s Public Works division to complete engineering functions and manage capital improvement projects for stormwater related needs within the City.

Authorization To Request Funding

A signed authorization to request for funding has been included below:

“I certify that I am requesting matching grant funds from the Virginia Community Flood Preparedness Fund on behave of the City of Fairfax in the Study category for the development of the Mosby Woods Floodplain Improvement Study.”

RA Hodges
Signature

3-31-22
Date

2022 Virginia CFPF Grant Application

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Attachment 1 – CFPF Grant Narratives Supporting Documents

1. Mosby Woods Floodplain Improvements Study Drainage Area Exhibit
2. Kimley-Horn – Summary of Proposed Services
3. City of Fairfax – 2023 Stormwater Utility Fund Project Information Sheet
4. City of Fairfax – 2023 Complete Stormwater Utility Fund

Attachment 2 – CFPF Grant Manual Appendix A

1. Appendix A: Application Form for Grant Request for All Categories

Attachment 3 – CFPF Grant Manual Appendix C/D

1. Appendix C: Scoring Criteria for Studies
2. Appendix D: Checklist All Categories
3. Mosby Woods Floodplain Improvements Study Area FIRM Map
4. City of Fairfax - Current Floodplain Ordinance (4.15 Floodplain Regulations)
5. City of Fairfax – 2035 Comprehensive Plan
6. Study Area - ADAPT VA Vulnerability Map
7. United States Census Median Household Income – Virginia & City of Fairfax

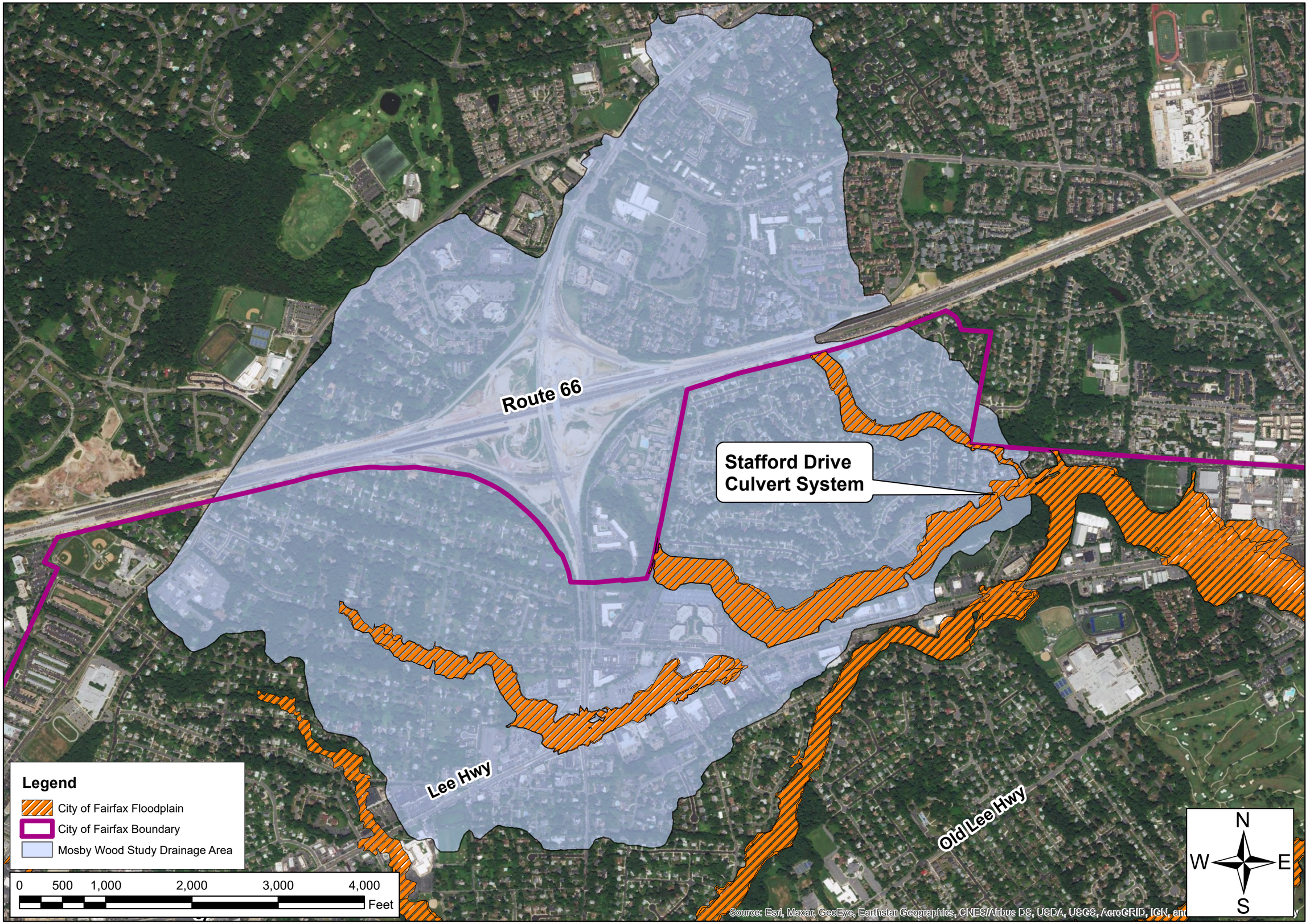
Attachment 1 – CFPF Grant Narratives Supporting Documents

Attachment 1 – Outline

1. Mosby Woods Floodplain Improvements Study Drainage Area Exhibit
2. Kimley-Horn - Summary of Proposed Services
3. City of Fairfax – 2023 Stormwater Utility Fund Project Information Sheet
4. City of Fairfax – 2023 Complete Stormwater Utility Fund

Attachment 1.1

Mosby Woods Floodplain Improvements Study Drainage Area Exhibit



KIMLEY-HORN - NORTHERN VIRGINIA OFFICE
11400 COMMERCE PARK DRIVE, SUITE 400
RESTON, VIRGINIA 20191

Kimley»Horn
Expect More. Experience Better.

DATE: 03/28/2021

DRAWN BY: J.A.C

CHECKED BY: J.A.C

CITY OF FAIRFAX
MOSBY WOODS STUDY DRAINAGE AREA EXHIBIT

MOSBY WOODS STUDY DRAINAGE AREA EXHIBIT
CITY OF FAIRFAX, VIRGINIA

SCALE: 1" = 1,000'

PROJECT NUMBER: EXHIBIT

SHEET NUMBER: EXHIBIT

Attachment 1.2

Kimley-Horn – Summary of Proposed Services

Kimley»Horn

April 4, 2022

Satoshi Eto
Public Works Program Manager
City of Fairfax, Department of Public Works
10455 Armstrong Street, Room 200
Fairfax, Virginia 22030

Re: Mosby Woods Floodplain Improvement Study

Dear Mr. Eto:

Kimley-Horn and Associates, Inc. (Kimley-Horn) is pleased to submit this task order proposal to the City of Fairfax (City) to provide professional consulting services related to the development of a Mosby Woods Floodplain Improvement Study. The language outlined below identifies our project understanding, scope of requested services, and accompanying fees related to the overall project.

PROJECT UNDERSTANDING

This proposal summarizes the phases and tasks necessary to prepare a Study to evaluate the effects of the North Fork of the Accotink Creek floodplain on the Mosby Woods Condominiums, as well as develop strategies to prevent and mitigate damages from the riverine flooding. This Scope of Services will focus on 6,600 linear feet of stream channel (Study Area) depicted in Attachment 1 of this Scope of Services.

SCOPE OF SERVICES

This proposal has been divided into six (6) tasks. Each task is outlined below with a brief summary defining the Scope of Services for each task. A time and materials not-to-exceed cost to perform this work is provided (Attachment 2) and includes Kimley-Horn project management and coordination time.

1. Site Base Mapping, Project Due Diligence, and Site Visit
2. Full Buildout Hydrologic Analysis of the Study Area
3. Stream Corridor Hydraulics Study
4. Development of a Mosby Woods Floods Improvement Concept Plan
5. Mosby Woods Floodplain Improvements Study Report
6. Meetings & Coordination

Task 100 - Site Base Mapping, Project Due Diligence, and Site Visit

Kimley-Horn will develop a Geographic Information Systems (GIS) base-map illustrating the existing site conditions from Plantation Parkway through Stafford Drive to the culvert system at Fairfax Boulevard (Route 50) / Lee Highway (Route 29). The base mapping will depict the 6,600 linear feet of stream along the Study Area and will illustrate existing City of Fairfax and FEMA GIS floodplain features, as well as depict the impacts of the existing floodplain on pertinent infrastructure. The base mapping will be derived using the most readily available City and FEMA GIS shapefile data, aerial imagery, and previously developed Study Limit data provided by the City. The base mapping will be used by Kimley-Horn to assist in site reconnaissance efforts and to supplement all meetings, efforts, and study deliverables outlined in this Scope of Services.

Kimley-Horn will a perform project due diligence for the Study Area by compiling pertinent information from the following reports and data sets:

- City of Fairfax - Flood Insurance Study (FIS)
- FEMA relevant Flood Insurance Rate Maps (FIRMs)
- Previous studies performed within the project study area (to be provided by the City)
- Available City of Fairfax existing HEC-HMS (Hydrologic Models) and HEC-RAS (Hydraulic / Floodplain Models)
- Available VDOT / City of Fairfax Bridge and Culvert Plans for the project Study Area
- Best available FEMA, State, and City GIS Shapefile Data and Aerial Imagery

Kimley-Horn will compile all relevant Study Area floodplain and site data in a Technical Support Data Memo (TSDM) and submit to the City.

Kimley-Horn will utilize the site base mapping and background data obtained through this task to perform a site visit to photo-document the current conditions along the Study Area. Kimley-Horn will compile the base mapping and site photos to create a composite GIS base-map depicting the photo locations captured in the field that identify potential Study Area opportunities and constraints.

Task 200 – Full Buildout Hydrologic Analysis of the Study Area

Kimley-Horn will perform a full buildout hydrologic evaluation of the Study Area watershed utilizing aerial imagery, as well as the City's 2035 Comprehensive Plan. As part of this analysis, Kimley-Horn will evaluate the major drainage area sub-basins within the following watersheds.

- Plantation Parkway Culvert System
- Stafford Drive Culvert System
- Ranger Road Culvert System
- Fairfax Boulevard (Rt.50) / Lee Highway (Rt.29) Culvert System

Kimley-Horn will use the United States Department of Agriculture's (USDA) Technical Release-55 (TR-55) Urban Hydrology for Small Watersheds SCS Methodology to determine the existing basin hydrologic parameters such as Runoff Curve Numbers (RCNs) and Times of Concentrations (Tc) / Lag Times (Tlag). The hydrology will be derived from a compilation of the most readily available aerial landcover data, survey data, GIS Shapefile data, and soils data. The derived drainage basin hydrologic conditions will be utilized as model input parameters in subsequent tasks to determine the Study Area's basin and stream corridor runoff inflows for the 1-yr, 2-yr, 10-yr, and 100-yr storm events. As part of this task, Kimley-Horn will also model the historical flows related to the rainfall and runoff from Tropical Storm Lee, a known flooding event at the Mosby Woods Condominiums.

The hydrologic data generated will be utilized in conjunction with the Army Corp of Engineer's HEC-HMS (Hydrologic Modeling System) software to simulate the hydrologic stream processes at junctions and specific locations within the 6,600 linear foot stream corridor that traverses the Study Area. The model input parameters for the Mosby Woods Study Area HEC-HMS model will be developed based on the following information:

- City of Fairfax and (potentially) Fairfax County supplemental GIS topography.
- NOAA Atlas 14 Precipitation Data and City Specific Precipitation data
- SCS curve numbers based on ArcGIS orthogonal imagery and NRCS Soil information within the Study Area watershed.
- Time of Concentration / Lag time values developed based on ArcGIS orthogonal imagery and City of Fairfax / Fairfax County topography.

A comprehensive basin routing comparison will be performed to determine the effects of different runoff producing events on the existing Study Area. In developing this model, Kimley-Horn will be able to determine the volumetric discharge (flow rate) for multiple storm events which will be utilized as inputs in the HEC-RAS stream corridor hydraulics study (Task 300).

As part of this task, Kimley-Horn will compare our modeled hydrologic results with the published flows outlined in the City of Fairfax – Flood Insurance Study (FIS) for the North Fork of Accotink Creek, as well as the published flows at the Confluence of the North Fork of Accotink Creek with the Main Stem of Accotink Creek. Both sets of stream flows (KH derived / FIS) will be utilized in the hydraulic models developed in Task 300 (Stream Corridor Hydraulics Study).

All information derived and modeled in this task will be documented within the Mosby Woods Floodplain Improvements Study Final Report (Task 500).

Task 300 – Stream Corridor Hydraulics Study

Existing Conditions Modeling

Kimley-Horn will build an existing conditions floodplain hydraulics model of the 6,600 linear foot stream system within the Study Area utilizing previously derived topographic survey information for portions of the stream reach, and readily available City GIS shapefile data as supplemental information (contour, road, structure, etc.). Kimley-Horn will generate representative cross-sections for the 6,600 linear foot stream reach from available survey information and supplemental GIS contours, to input into the Army Corp of Engineer's HEC-RAS (River Analysis System) modeling software. The existing conditions floodplain hydraulics model will be developed to reflect channel and cross-sectional geometry indicative of the stream reach as well as any pertinent site characteristics (obstructions, structures, residences etc.), present throughout the stream reach / floodplain area.

Kimley-Horn will route the flows derived in the Full Buildout hydrologic analyses (Task 200) through the existing conditions floodplain hydraulic model to determine the existing stream/floodplain cross-sectional hydraulic characteristics along the Study Area. The hydraulic data generated in this task will be used to determine water surface elevations along the existing stream reach, specifically around the Mosby Woods Community and downstream from the Stafford Drive culvert system. This analysis will also quantify the effect of the Plantation Parkway, Stafford Drive, Ranger Road, and the Route 50/Route 29 Culvert System on the stream corridor and floodplain. Existing flood inundation depths, stream and floodplain velocities, cross-sectional top widths, and energy and hydraulic grade line calculations will be derived as part of this analysis.

Once the existing conditions model is developed, Kimley-Horn will create a separate HEC-RAS geometry file that will nest the Kimley-Horn derived exiting conditions model into the preliminary revised HEC-

RAS model developed for the revised Flood Insurance Study for the City of Fairfax (Stantec – September 2020). It is assumed that this model will be provided by the City to Kimley-Horn for this task.

Kimley-Horn will document the results for both the existing conditions floodplain hydraulics model, as well as the nested existing conditions hydraulics model in the overall preliminary 2020 FEMA floodplain model. These values will provide a baseline comparison for all future modeling analysis.

Floodplain Improvements Sensitivity Modeling

Kimley-Horn will modify the Existing Conditions Hydraulics Model(s) to evaluate proposed changes that may help abate the flooding at the Mosby Woods Condominium complex. Floodplain sensitivity modeling will focus on infrastructure changes at the major culvert systems, stream, and floodplain grading techniques, and pairing of the two within the Study Area. Evaluation of the overall stream corridor will be prioritized as to model the effect of the changes wholistically on the floodplain system, as to not potentially transfer any flooding downstream.

Kimley-Horn will route the flow data derived in Task 200 to analyze the viability and success of potential changes along the Study Area stream corridor. Revised Water Surface Elevations for all modeled storm events will be compared to existing conditions as to quantify the effect of the proposed improvements on the inundation depths and horizontal spread of the floodplain limits.

All relevant model cross sections and stream profiles will be updated to reflect any conceptual proposed infrastructure changes, grading, structure placement or channel realignment techniques, if applicable, within the Study Area limits. This information will be included in the Mosby Woods Floodplain Improvements Study Report (Task 500)

Task 400 - Development of a Mosby Woods Flood Improvement Concept Plan

Based on the results determined in the Floodplain Improvements Sensitivity modeling, Kimley-Horn will derive a 24x36 AutoCAD developed conceptual plan that will graphically depict locations of potential improvements among the 6,600 linear foot stream reach. Proposed conceptual improvements will include, but are not limited to the following:

- Infrastructure based improvements
- Natural based solutions
- Preservation and creation of open space and focus on permanent conservation of lands having flood resilience value

Due to the conceptual nature of this plan all proposed structural improvements, grading and riparian enhancements, and proposed future project implementation locations will have limited engineering design and will focus on project layout and location.

Task 500 - Mosby Woods Floodplain Improvements Study Report

Kimley-Horn will develop a Mosby Woods Floodplain Improvement Study report outlining the information derived in tasks 100 - 400. Study graphics, tabular summaries, numerical analysis, and conceptual level designs created in all previous tasks will be included in the final report. Recommendations on future

drainage basin stormwater management improvements, future storm sewer designs, as well as comprehensive drainage and floodplain improvement implementation scenarios for the Study Area will be included with the report.

Task 600 – Meetings & Coordination

Kimley-Horn staff will be available for up to two (2) project coordination meetings, in person (if requested), to discuss the project. In addition, Kimley-Horn staff will participate in calls to discuss the project with City staff. If additional meetings and coordination activities are requested, Kimley-Horn will prepare a separate Scope of Services and cost estimate for client approval prior to proceeding with the additional work.

DELIVERABLES

The following items are anticipated as project deliverables for this Scope of Services.

- Site specific floodplain data compilation outlined in a Technical Support Data Memo (TSDM)
- HEC-HMS Hydrologic / HEC-RAS Stream Hydraulic Models(s)
- Mosby Woods Floodplain Improvements Study – 24 x 36 AutoCAD Derived Conceptual Plan
- Mosby Woods Floodplain Improvements Study – Final Report
- All maps, models, analyses, spreadsheets, and base data utilized for the design (if requested).

OVERALL PROJECT ASSUMPTIONS

For the purposes of developing this proposed Scope of Services and the accompanying cost estimate, we have made the following assumptions:

- All previous project information developed by others will be provided by the City to Kimley-Horn in a timely manner to accommodate anticipated project schedule.
- The flood studies and analyses proposed in this Scope of Services are intended as a planning level and will not constitute a formal FEMA floodplain study. As such this information and data will not be stamped and sealed by a Virginia Professional Engineer (PE).
- All analyses and studies developed in this Scope of Services will be based on limited survey information, and as such, the information derived will be considered “for information purposes only”
- The Conceptual Design Plan referenced in this Scope of Services will be limited in terms of engineering design and analysis. As such, they will be not stamped by a licensed Virginia Professional Engineer and labeled as “Not for Construction Purposes”.
- The City will provide site access permission to Kimley-Horn, for conducting all necessary fieldwork related tasks in a timely manner to facilitate the project schedule.
- Accuracy and precision of data and previous studies provided by others is solely on the consulting firm that derived the studies. Kimley-Horn will review all data provided by the City with regards to the Study Area but assumes no responsibility for information outlined in the studies developed by others.
- Readily available City GIS shapefile and geodatabase information will be used to supplement this study, as needed.

- The City will provide all coordination with inter-city departments with regards to this project.
- This proposal and the accompanying cost estimate are valid for a period of 60 days and will expire if not accepted within that timeframe.

OVERALL PROJECT EXCLUSIONS

Services that are not currently anticipated as part of this project and are therefore outside the scope of this task order proposal include the following:

- Phase I, II, III Archaeological Investigations
- Environmental Site Assessments
- Perennial Stream Assessments and/or Flow Determinations
- Wetland Permit Compliance
- Project Renderings
- VSMP Compliance
- Floodplain Studies and Submittals
- FEMA CLOMR or LOMR Applications
- Dam Safety Compliance
- Dam Break Inundation Zone (DBIZ) Modeling / Mapping
- Engineering Design Plan Submittals
- Utility Design
- VDOT Design or Permitting
- Right of Way Permitting or Dedication associated with planned or future development
- Development/Delivery of Presentations, Board of Supervisors, Committees, or the Public
- Notifications to impacted Property Owners
- All other services not explicitly stated in this Scope of Services

SCHEDULE

The tasks referenced in this scope will be coordinated with City Staff. Meetings, action items, and deliverables will be tracked on a monthly basis and reported to the City with a monthly progress report for documentation of services provided. Assuming Kimley-Horn receives a notice to proceed by July 1, 2022, Kimley-Horn anticipates completion of the Scope of Services outlined above by October 31, 2022. A detailed schedule will be developed for the City outlining project workflow and deliverables after contract execution.

FEE AND BILLING

Kimley-Horn will provide the following scope of services under our term contract #17007-2017-KHA. The following tasks will be provided on a time and materials basis not to exceed a total project cost of **$48,570.66.** A detailed breakdown (by task) of Kimley-Horn Horn's fee estimate is provided in Attachment 1 and utilizes the rate schedule as provided for in the City of Fairfax Task Order Contract #17007-2017-KHA, Year 5. Please note that hourly fees will be invoiced monthly based upon hours expended for services performed and payment will be due within 25 days of receipt of invoices related to this project.

CLOSURE

The work described with this proposal will be completed in accordance with the terms and conditions of Contract #17007-2017-KHA between the City of Fairfax and Kimley-Horn. We appreciate the opportunity to provide these services to you. Please contact either of us if you have any questions.

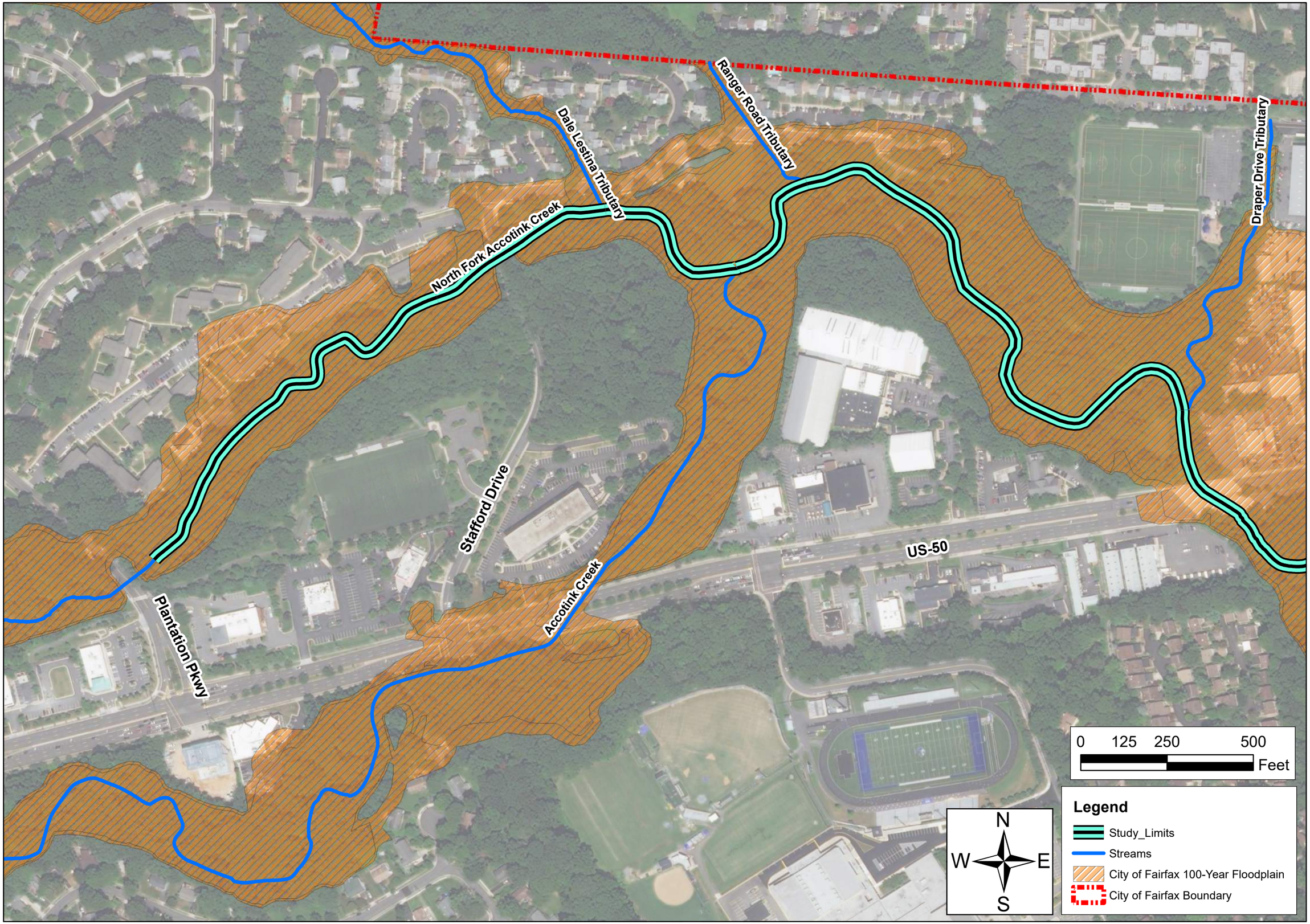
Very truly yours,
KIMLEY-HORN AND ASSOCIATES, INC.

Jon D'Alessandro, P.E.
Senior Project Manager

Erica Carter, P.E.
Principal

Kimley»Horn

Attachment 1 – Mosby Woods Floodplain Improvements Study Area



KIMLEY-HORN - NORTHERN VIRGINIA OFFICE
11400 COMMERCE PARK DRIVE, SUITE 400
RESTON, VIRGINIA 20191

Kimley»Horn
Expect More. Experience Better.

DATE:	03/30/2022
DRAWN BY:	M.J.M
CHECKED BY:	J.A.C

CITY OF FAIRFAX
MOSBY WOODS STUDY LIMITS EXHIBIT

PREPARED FOR
THE CITY OF FAIRFAX DEPARTMENT OF PUBLIC WORKS

SCALE:	1" = 250'
PROJECT NUMBER:	EXHIBIT
SHEET NUMBER:	EXHIBIT

Attachment 2 – Kimley Horn Fee Breakdown

City of Fairfax, Virginia
Mosby Woods Floodplain Improvements Study
April 4, 2022
T&M not-to-exceed Cost Estimate

Loaded Hourly Rate[1]		**$326.73**	**$274.77**	**$220.46**	**$184.28**	**$146.89**	**$124.39**					**10%**	
Task	**Description**	Senior Technical Specialist	Senior Professional II	Senior Professional I	Professional II	Professional I	Analyst	**Budget Total Hours**	**Budget Labor Cost**	**Reimbursable Expenses**	**Subconsultant Services**	**Subconsultant Mark-up**	**Budget Total Cost**
100	**Site Base Mapping, Project Due Diligence, and Site Visit**		**4**		**12**		**12**	**28**	**$4,803.12**	**$50.00**	**$0.00**	**$0.00**	**$4,853.12**
200	**Full Buildout Hydrologic Analysis of the Study Limits**		**8**		**16**		**12**	**36**	**$6,639.32**	**$0.00**	**$0.00**	**$0.00**	**$6,639.32**
300	**Stream Corridor Hydraulics Study**		**16**		**48**		**24**	**88**	**$16,227.12**	**$0.00**	**$0.00**	**$0.00**	**$16,227.12**
400	**Development of a Mosby Woods Flood Improvement Concept Plan**		**16**		**12**		**24**	**52**	**$9,593.04**	**$100.00**	**$0.00**	**$0.00**	**$9,693.04**
500	**Mosby Woods Floodplain Improvements Study Report**		**8**		**20**		**16**	**44**	**$7,874.00**	**$50.00**	**$0.00**	**$0.00**	**$7,924.00**
600	**Meetings & Coordination**		**8**		**4**		**2**	**14**	**$3,184.06**	**$50.00**	**$0.00**	**$0.00**	**$3,234.06**
	TOTAL	**0**	**60**	**0**	**112**	**0**	**90**	**262**	**$48,320.66**	**$250.00**	**$0.00**	**$0.00**	**$48,570.66**

[1] Rates (Year 5) per City of Fairfax Task Order Contract #17007-2017-KHA

Attachment 1.3

City of Fairfax – 2023 Stormwater Utility Fund Project Information Sheet

PROJECT INFORMATION

Name:	Flood Mitigation Planning & Resiliency	Project #	–

2035 Comprehensive Plan Reference:	NE2.1	pg 108	2035 Comprehensive Plan Timeframe:	Long-Term

Comprehensive Plan Element

	Land Use		✓	Environment and Sustainability
	Multimodal Transportation			Economic Vitality
	Community Services			Other City Plan/Policy

Statement of Need:

This project supports the development of two flood mitigation initiatives. The first is a Flood Resilience Plan for the city. This plan provides project-based improvements for flood control and resilience, leverages nature-based infrastructure, considers all parts of a locality, includes coordination with other local and inter-jurisdictional activities, and is based on best available science. The plan will be developed to also provide credits towards FEMA's Community Rating System.

During the design of the Stafford Drive Stream Restoration Project, the effects to the floodplain were reviewed through hydraulic modeling. It was found that the culvert under Stafford Drive is a contributing factor in the floodplain impacts to the Mosby Woods condominium community. A flood study is proposed to evaluate the current condition of the Stafford Drive culvert and investigate options to improve the flood conditions in this area.
.
The city intends to apply for Community Flood Preparedness Fund grants for two projects which can, if approved, provide up to 75% funding for the flood preparedness plan, and 50% for the flood mitigation study. Development of a Flood Resilience Plan is a prerequisite to applying for any future grant funding for construction of a mitigation project, which can fund 50-70% of the project costs.

Picture:

Funding Allocation	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	Totals
Feasibility/Planning/Design/Engineering	-	225,000	-	-	-	-	225,000
Total Costs	**$ -**	**$ 225,000**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 225,000**

Funding Sources	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	Totals
State - Other	-	148,250	-	-	-	-	148,250
Stormwater Utility Fund	-	76,750	-	-	-	-	76,750
Total Funding	**$ -**	**$ 225,000**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 225,000**

Estimated Project Timeline		New Project
Project Origination Date	02/01/22	
Project Design Start Date	07/01/22	✓
Construction Start Date		
Project Completion Date	06/30/23	

Financial Impacts	
Annual Revenue Generated:	$ -
Annual Cost Savings:	$ -
Annual Increase in Operating Costs:	$ -
Projected Future Savings:	$ -

Responsible Department(s):			
Cable TV		Police	
CD&P		PW Admin	
City Manager		PW Fleet	
Finance		PW Operations	
Fire		PW Signs/Signal	
Historic		PW Stormwater	✓
Human Svc		PW Streets	
IT		PW Transport	
Parks & Rec		PW Wastewater	
Personnel		Schools	

Attachment 1.4

City of Fairfax – 2023 Complete Stormwater Utility Fund

STORMWATER UTILITY FUND

City of Fairfax, Virginia
FY 2023 Stormwater Utility Fund
Budget Summary

	FY 2021 Actual	FY 2022 Budget	FY 2022 Estimate	FY 2023 Proposed	Variance to Budget $	Variance to Budget %
Expenditures						
Salaries	$ -	$ -	$ -	$ 966,189	$ 966,189	0.00%
Fringe Benefits	-	-	-	433,138	433,138	0.00%
Purchased Services	-	-	-	414,246	414,246	0.00%
Internal Services	-	-	-	489,866	489,866	0.00%
Other Charges	-	-	-	210,850	210,850	0.00%
Supplies & Materials	-	-	-	225,900	225,900	0.00%
Capital Outlay	-	-	-	2,819,257	2,819,257	0.00%
Total Expenditures	**$ -**	**$ -**	**$ -**	**$ 5,559,445**	**$ 5,559,445**	**0.00%**
Revenues						
Revenue Bond Funds	$ -	$ -	$ -	$ 1,775,000	$ 1,775,000	0.00%
Annual Billing Units Revenue	-	-	-	2,718,634	2,718,634	0.00%
Grants	-	-	-	1,065,811	1,065,811	0.00%
Total Revenues	**$ -**	**$ -**	**$ -**	**$ 5,559,445**	**$ 5,559,445**	**0.00%**
Net Cost to the City	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**0.00%**
Total FTE	**-**	**-**	**-**	**14.60**		

FUNCTION: Stormwater Utility Fund
DEPARTMENT: Public Works
DIVISION OR ACTIVITY: Storm Drainage Operations & Maintenance

BUDGET COMMENTS:
The FY2023 budget creates the Stormwater Utility Fund. The Storm Drainage function will be transferred from the General Fund to the Stormwater Utility Fund.

Cost Center 438120: Stormwater Utility Operations & Maintenance

Title	FY 2021 Actual	FY 2022 Budget	FY 2022 Estimate	FY 2023 Proposed	Variance to Budget $	Variance to Budget %
Salaries	$ -	$ -	$ -	$ 623,546	$ 623,546	0.00%
Fringe Benefits	-	-	-	265,168	265,168	0.00%
Purchased Services	-	-	-	262,746	262,746	0.00%
Internal Services	-	-	-	154,216	154,216	0.00%
Other Charges	-	-	-	67,000	67,000	0.00%
Supplies & Materials	-	-	-	205,374	205,374	0.00%
Capital Outlay	-	-	-	5,000	5,000	0.00%
Total	**$ -**	**$ -**	**$ -**	**$ 1,583,050**	**$ 1,583,050**	**0.00%**

Personnel Classification	Grade	FY 2021 Actual	FY 2022 Budget	FY 2022 Estimate	FY 2023 Proposed
Crew Supervisor	119	-	-	-	1.00
Asst Crew Supervisor	114	-	-	-	1.00
Equip Operator I	111	-	-	-	2.00
Utility Worker II	109	-	-	-	2.00
Truck Driver I	107	-	-	-	4.00
Total FTE		**-**	**-**	**-**	**10.00**

FUNCTION: Stormwater Utility Fund
DEPARTMENT: Public Works
DIVISION OR ACTIVITY: Storm Drainage Operations & Maintenance

PROGRAM:

The Storm Drainage division maintains the city's stormwater collection systems, which consist of 300,000 linear feet of storm pipe, 1,840 catch basins, 145 outfalls, 28 box culverts, 324 driveway culverts, 7 bridges, and 37 bridge culverts. Crews replace deteriorated storm lines, perform preventative maintenance tasks biannually, clear blocked streams, repair box culverts, and repair damaged driveway pipe and ditch lines.

OBJECTIVES:

- Clean ditch lines, storm pipes, and catch basins
- Repair and replace storm pipes and catch basins.
- Clean and clear stream beds of brush/obstacles to improve flow without affecting downstream properties.
- Repair box culverts.

SERVICES AND PRODUCTS:

- Catch basin repair
- Creek and stream maintenance
- Drainage ditch maintenance
- Storm sewer pipe maintenance, repair, and replacement
- Culvert repairs
- Bridge repairs
- Install lining to storm pipe and culverts
- Concrete lid/top replacement and repair
- Perform emergency drainage repairs and projects
- Provide sandbags and emergency response to flooding

FUNCTION: Stormwater Utility Fund
DEPARTMENT: Public Works
DIVISION OR ACTIVITY: Stormwater Utility Administration & Engineering

Budget Comments:
The FY2023 budget creates the Stormwater Utility Fund. The stormwater related costs from Public Works Administration and Engineering will be transferred from the General Fund to the Stormwater Utility Fund.

Cost Center 438130: Stormwater Utility Administration & Engineering

Title	FY 2021 Actual	FY 2022 Budget	FY 2022 Estimate	FY 2023 Proposed	Variance to Budget $	Variance to Budget %
Salaries	$ -	$ -	$ -	$ 342,643	$ 342,643	0.00%
Fringe Benefits	-	-	-	167,969	167,969	0.00%
Purchased Services	-	-	-	151,500	151,500	0.00%
Internal Services	-	-	-	335,650	335,650	0.00%
Other Charges	-	-	-	143,850	143,850	0.00%
Supplies & Materials	-	-	-	20,526	20,526	0.00%
Capital Outlay	-	-	-	2,814,257	2,814,257	0.00%
Total	**$ -**	**$ -**	**$ -**	**$ 3,976,395**	**$ 3,976,395**	**0.00%**

Personnel Classification	Grade	FY 2021 Actual	FY 2022 Budget	FY 2022 Estimate	FY 2023 Proposed
Director of Public Works	**	-	-	-	0.15
Program Manager	S02	-	-	-	0.30
Sustainability Coordinator	121	-	-	-	0.15
Utilities Analyst	121	-	-	-	0.50
Utilities Coordinator	121	-	-	-	0.50
Stormwater Program Specialist	119	-	-	-	0.70
Stormwater Plan Reviewer	118	-	-	-	0.25
Urban Forester	117	-	-	-	1.00
Facilities Inspectors	117	-	-	-	0.60
Contract Manager	114	-	-	-	0.15
Admin Assistant IV	113	-	-	-	0.30
Total FTE		**-**	**-**	**-**	**4.60**

FUNCTION: **Stormwater Utility Fund**
DEPARTMENT: **Public Works**
DIVISION OR ACTIVITY: **Stormwater Utility Administration & Engineering**

PROGRAM:

The office of the director manages seven public works divisions, including Stormwater Management, and provides professional engineering services for constructing and maintaining stormwater infrastructure, environmental projects, and drainage improvements.

OBJECTIVES:

- Maintain compliance with the city's Municipal Separate Storm Sewer System (MS4) permit.
- Meet the city's Total Maximum Daily Load (TMDL) goals for the Chesapeake Bay and local waterways.
- Administrate erosion and sediment control and stormwater pollution prevention programs for public and private development projects.
- Maintain records of the layout and condition of the city's storm sewer infrastructure.
- Deliver adopted capital drainage improvement projects that provide direct benefit to affected property owners.
- Provide public outreach and education on stormwater management and pollution prevention topics.
- Encourage the public to engage in stormwater-positive actions and activities.
- Administrate Stormwater Utility capital programming.
- Assist city residents and businesses with finding solutions to drainage problems.

SERVICES and PRODUCTS:

- Administrative services for the Stormwater Utility.
- Drainage improvement projects.
- Environmental projects; stream restoration, stormwater facility upgrades and retrofits.
- Evaluation of drainage concerns, both public and private.
- Printed and electronic outreach and education materials on stormwater topics.
- Administration of Virginia Erosion & Sediment Control and Virginia Stormwater Management Program laws through inspections and enforcement.

Stormwater Utility Fund Expense Detail

Account	Account Title	FY 2021 Actual	FY 2022 Budget	FY 2022 Estimate	FY 2023 Proposed	Variance to Budget $	Variance to Budget %
SWU Operations & Maintenance (438120)							
511105	Salaries - Full Time	-	-	-	540,921	540,921	0.00%
511115	Salaries - Overtime	-	-	-	68,125	68,125	0.00%
511125	Temporary Help	-	-	-	6,000	6,000	0.00%
511130	On Call Pay	-	-	-	8,500	8,500	0.00%
512110	Fringe Benefits	-	-	-	265,168	265,168	0.00%
530113	Contract Services	-	-	-	262,746	262,746	0.00%
540102	Motor Pool Charges	-	-	-	154,216	154,216	0.00%
550430	Equipment Rental	-	-	-	1,000	1,000	0.00%
550501	Travel & Training	-	-	-	6,000	6,000	0.00%
550806	Other Services	-	-	-	60,000	60,000	0.00%
560110	Office Supplies	-	-	-	6,000	6,000	0.00%
560120	Small Equipment	-	-	-	10,500	10,500	0.00%
560416	Uniforms	-	-	-	4,389	4,389	0.00%
560420	Operating Supplies	-	-	-	38,900	38,900	0.00%
560421	Pipe & Accessories	-	-	-	10,000	10,000	0.00%
560422	Construction Materials	-	-	-	20,000	20,000	0.00%
560424	Concrete	-	-	-	7,000	7,000	0.00%
560430	Operating Materials	-	-	-	101,585	101,585	0.00%
560435	Soil & Mulch	-	-	-	7,000	7,000	0.00%
580214	Capital Outlay	-	-	-	5,000	5,000	0.00%
	Subtotal	**-**	**-**	**-**	**1,583,050**	**1,583,050**	**0.00%**
SWU Admin & Engineering (438130)							
511105	Salaries - Full Time	-	-	-	342,643	342,643	0.00%
512110	Fringe Benefits	-	-	-	167,969	167,969	0.00%
530113	Contract Services	-	-	-	151,500	151,500	0.00%
540060	Management Fee	-	-	-	335,650	335,650	0.00%
560110	Office Supplies	-	-	-	20,526	20,526	0.00%
580501	Ashby Pond Dredging	-	-	-	984,927	984,927	0.00%
580523	Flood Mitigation Planning & Resiliency	-	-	-	76,750	76,750	0.00%
580503	Mosby Road Drainage Improvements	-	-	-	45,000	45,000	0.00%
580504	Municipal Separate Storm Sewer Systen	-	-	-	155,000	155,000	0.00%
580506	Northfax Linear Park	-	-	-	80,000	80,000	0.00%
580507	Private BMP/SWM Inspection	-	-	-	130,000	130,000	0.00%
580508	Public BMP/SWM Inspection & Mainter	-	-	-	130,000	130,000	0.00%
580509	Reline Bridge Culvert Storm Structures	-	-	-	85,000	85,000	0.00%
580510	Replacement of Failing Galvanized Stor	-	-	-	120,000	120,000	0.00%
580514	Storm Drainage Repair for Paving Schec	-	-	-	110,000	110,000	0.00%
580516	Storm Pipe Lining Rehabilitation	-	-	-	120,000	120,000	0.00%
580517	Storm Sewer Evaluation & Update Progr	-	-	-	100,000	100,000	0.00%
580519	Stream Evaluation and Restoration	-	-	-	200,000	200,000	0.00%
580520	TMDL Action Plans	-	-	-	477,580	477,580	0.00%
590102	Reserve	-	-	-	143,850	143,850	0.00%
	Subtotal	**-**	**-**	**-**	**3,976,395**	**3,976,395**	**0.00%**
Total Stormwater Utility Fund		**$ -**	**$ -**	**$ -**	**$ 5,559,445**	**$ 5,559,445**	**0.00%**

PROJECT INFORMATION

Name: Replacement of Failing Galvanized Storm Drainage Systems **Project #** 340-644411-580330

2035 Comprehensive Plan Reference: IU1.3.1 p. 144 **2035 Comprehensive Plan Timeframe:** Ongoing

Comprehensive Plan Element

✓	Land Use	✓	Environment and Sustainability
	Multimodal Transportation		Economic Vitality
	Community Services		Other City Plan/Policy

Statement of Need:

This project provides for the replacement of the City's galvanized storm drain systems located within the city's right-of-ways and citizen properties. Failed storm sewer mains create sinkholes and hazards. The failing systems would be replaced with HDPE pipe and new structures.

FY 2022 - Old Lee Highway

FY 2023 - Old Lee Highway

FY 2024 - Orchard Street & Burrows Avenue

FY 2025 - Maple Street

FY 2026 - Towlston, appx. 70' X12"

FY 2027 - TBD

Picture:

Funding Allocation	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	Totals
Infrastructure Maint/Repair/Upgrade	120,000	120,000	120,000	120,000	120,000	120,000	600,000
Total Costs	**$ 120,000**	**$ 120,000**	**$ 120,000**	**$ 120,000**	**$ 120,000**	**$ 120,000**	**$ 600,000**

Funding Sources	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	Totals
Stormwater Utility Fund	120,000	120,000	120,000	120,000	120,000	120,000	600,000
Total Funding	**$ 120,000**	**$ 120,000**	**$ 120,000**	**$ 120,000**	**$ 120,000**	**$ 120,000**	**$ 600,000**

Estimated Project Timeline		New Project
Project Origination Date		
Project Design Start Date		
Construction Start Date		
Project Completion Date	Ongoing	

Financial Impacts	
Annual Revenue Generated:	$ -
Annual Cost Savings:	$ -
Annual Increase in Operating Costs:	$ -
Projected Future Savings:	$ -

Responsible Department(s):			
Cable TV		Police	
CD&P		PW Admin	
City Manager		PW Fleet	
Finance		PW Operations	
Fire		PW Signs/Signal	
Historic		PW Stormwater	✓
Human Svc		PW Streets	✓
IT		PW Transport	
Parks & Rec		PW Wastewater	
Personnel		Schools	

PROJECT INFORMATION

Name: Storm Drainage Repair for Paving Schedule | **Project #** 340-644408-580330

2035 Comprehensive Plan Reference: IU1.3.1 p. 144 | **2035 Comprehensive Plan Timeframe:** Ongoing

Comprehensive Plan Element

✓	Land Use		✓	Environment and Sustainability
	Multimodal Transportation			Economic Vitality
✓	Community Services			Other City Plan/Policy

Statement of Need:

This project is to address all storm drainage infrastructure issues prior to road overlay paving construction. Work would include storm pipe replacement and structure reconstruction.

- Storm pipe replacement - 68' LF
- Storm pipe lining - 590' LF
- 13 Throat reconstructions
- 9 Storm top reconstructions
- 5 Manhole rehabilitations

Picture:

Funding Allocation	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	Totals
Infrastructure Maint/Repair/Upgrade	110,000	110,000	110,000	110,000	110,000	110,000	550,000
Total Costs	**$ 110,000**	**$ 110,000**	**$ 110,000**	**$ 110,000**	**$ 110,000**	**$ 110,000**	**$ 550,000**

Funding Sources	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	Totals
Stormwater Utility Fund	110,000	110,000	110,000	110,000	110,000	110,000	550,000
Total Funding	**$ 110,000**	**$ 110,000**	**$ 110,000**	**$ 110,000**	**$ 110,000**	**$ 110,000**	**$ 550,000**

Estimated Project Timeline	
Project Origination Date	
Project Design Start Date	
Construction Start Date	
Project Completion Date	Ongoing

New Project

Financial Impacts	
Annual Revenue Generated:	$ -
Annual Cost Savings:	$ -
Annual Increase in Operating Costs:	$ -
Projected Future Savings:	$ -

Responsible Department(s):			
Cable TV		Police	
CD&P		PW Admin	
City Manager		PW Fleet	
Finance		PW Operations	
Fire		PW Signs/Signal	
Historic		PW Stormwater	✓
Human Svc		PW Streets	✓
IT		PW Transport	
Parks & Rec		PW Wastewater	
Personnel		Schools	

PROJECT INFORMATION

Name: Storm Pipe Lining Rehabilitation | **Project #** 340-644410-580330

2035 Comprehensive Plan Reference: IU1.3.1 p. 144 | **2035 Comprehensive Plan Timeframe:** Ongoing

Comprehensive Plan Element

✓	Land Use		✓	Environment and Sustainability
	Multimodal Transportation			Economic Vitality
	Community Services			Other City Plan/Policy

Statement of Need:

This project is necessary to extend the life of the storm pipe lines. As concrete storm pipe linings age and deteriorate, sections can collapse and lose capacity. A plastic liner is installed on the inside wall of the pipe to maintain pipe integrity and stormwater flow.

Project includes mobilization, pre TV inspection, heavy cleaning, post TV inspection, and linear installation.

FY 2022: Hill Street - 400' at 24" LF

FY 2023: Country Club Hills Area - 288' at 15" LF

FY 2024: Westmore Area - 230' at 12" LF

FY 2025: Green Acres Area - 370' at 12" LF

FY 2026: Layton Hall Area - 126' at 12" LF and 150' at 18" LF

FY 2027: Rust Hill Neighborhood; to Truro Church

Picture:

Funding Allocation	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	Totals
Infrastructure Maint/Repair/Upgrade	120,000	120,000	120,000	120,000	120,000	120,000	600,000
Total Costs	**$ 120,000**	**$ 120,000**	**$ 120,000**	**$ 120,000**	**$ 120,000**	**$ 120,000**	**$ 600,000**

Funding Sources	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	Totals
Stormwater Utility Fund	120,000	120,000	120,000	120,000	120,000	120,000	600,000
Total Funding	**$ 120,000**	**$ 120,000**	**$ 120,000**	**$ 120,000**	**$ 120,000**	**$ 120,000**	**$ 600,000**

Estimated Project Timeline	
Project Origination Date	
Project Design Start Date	
Construction Start Date	
Project Completion Date	Ongoing

New Project

Financial Impacts	
Annual Revenue Generated:	$ -
Annual Cost Savings:	$ -
Annual Increase in Operating Costs:	$ -
Projected Future Savings:	$ -

Responsible Department(s):			
Cable TV		Police	
CD&P		PW Admin	
City Manager		PW Fleet	
Finance		PW Operations	
Fire		PW Signs/Signal	
Historic		PW Stormwater	✓
Human Svc		PW Streets	✓
IT		PW Transport	
Parks & Rec		PW Wastewater	
Personnel		Schools	

PROJECT INFORMATION

Name: Mosby Road Drainage Improvements **Project #** 340-344429-580330

2035 Comprehensive Plan Reference: IU1.3.2 p. 144 **2035 Comprehensive Plan Timeframe:** Ongoing

Comprehensive Plan Element

✓	Land Use	✓	Environment and Sustainability
	Multimodal Transportation		Economic Vitality
✓	Community Services		Other City Plan/Policy

Statement of Need:

This project is needed to reduce flooding on Mosby Road. During heavy rain storms stormwater from Burke Station Road and floods the road. This project will fund the design and construct curb and gutter, curb inlets and stormwater pipes to collect and direct the stormwater from Burke Station Road to an existing stormwater sewer main on Mosby Road. Design will be completed in FY23 with construction scheduled for FY24.

Picture:

Funding Allocation	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	Totals
Feasibility/Planning/Design/Engineering	-	45,000	-	-	-	-	45,000
Construction	-	-	250,000	-	-	-	250,000
Total Costs	**$ -**	**$ 45,000**	**$ 250,000**	**$ -**	**$ -**	**$ -**	**$ 295,000**

Funding Sources	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	Totals
Stormwater Utility Fund	-	45,000	250,000	-	-	-	295,000
Total Funding	**$ -**	**$ 45,000**	**$ 250,000**	**$ -**	**$ -**	**$ -**	**$ 295,000**

Estimated Project Timeline		New Project			Responsible Department(s):	
Project Origination Date	07/01/20		Cable TV		Police	
Project Design Start Date			CD&P		PW Admin	✓
Construction Start Date	07/01/23		City Manager		PW Fleet	
Project Completion Date	06/30/24		Finance		PW Operations	
			Fire		PW Signs/Signal	
Financial Impacts			Historic		PW Stormwater	
Annual Revenue Generated:	$ -		Human Svc		PW Streets	
Annual Cost Savings:	$ -		IT		PW Transport	
Annual Increase in Operating Costs:	$ -		Parks & Rec		PW Wastewater	
Projected Future Savings:	$ -		Personnel		Schools	

PROJECT INFORMATION

Name: Neighborhood Drainage Projects | **Project #** 340-644414-580330

2035 Comprehensive Plan Reference: IU1.3.1 p. 144 | **2035 Comprehensive Plan Timeframe:** Ongoing

Comprehensive Plan Element

✓	Land Use	✓	Environment and Sustainability
	Multimodal Transportation		Economic Vitality
✓	Community Services	✓	Other City Plan/Policy

Statement of Need:

These projects provide for stormwater improvements in residential neighborhoods to alleviate existing drainage problems. The projects have been requested by residents and represent the projects recommended for design and construction by staff.

FY23 - Orchard Dr. & Evergreen Dr., Design
Park Rd. & Fern St., Final Design & Construction

FY24 - Virginia St. & Dwight Ave., Design
Orchard Dr. & Evergreen Dr., Construction

FY25 - Orchard St. & Howerton Ave., Design
Virginia St. & Dwight Ave., Construction

FY26 - Norman Ave & Cobb Dr, Design
Orchard St. & Howerton Ave., Construction
.
FY27 - Parklane Rd, Design
Norman Ave & Cobb Dr, Construction

Picture:

Funding Allocation	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	Totals
Feasibility/Planning/Design/Engineering	-	100,000	100,000	100,000	50,000	100,000	450,000
Construction	-	420,000	400,000	600,000	600,000	200,000	2,220,000
Total Costs	**$ -**	**$ 520,000**	**$ 500,000**	**$ 700,000**	**$ 650,000**	**$ 300,000**	**$ 2,670,000**

Funding Sources	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	Totals
Financing	-	520,000	300,000	-	-	-	820,000
Stormwater Utility Fund	-	-	200,000	700,000	650,000	300,000	1,850,000
Total Funding	**$ -**	**$ 520,000**	**$ 500,000**	**$ 700,000**	**$ 650,000**	**$ 300,000**	**$ 2,670,000**

Estimated Project Timeline		New Project	Responsible Department(s):			
Project Origination Date			Cable TV		Police	
Project Design Start Date			CD&P		PW Admin	✓
Construction Start Date			City Manager		PW Fleet	
Project Completion Date	Ongoing		Finance		PW Operations	
			Fire		PW Signs/Signal	
Financial Impacts			Historic		PW Stormwater	✓
Annual Revenue Generated:	$ -		Human Svc		PW Streets	
Annual Cost Savings:	$ -		IT		PW Transport	
Annual Increase in Operating Costs:	$ -		Parks & Rec		PW Wastewater	
Projected Future Savings:	$ -		Personnel		Schools	

PROJECT INFORMATION

Name: Reline Bridge Culvert Storm Structures | **Project #** 320-631318-580330

2035 Comprehensive Plan Reference: IU1.3.1 p. 144 | **2035 Comprehensive Plan Timeframe:** Ongoing

Comprehensive Plan Element

	Land Use		✓	Environment and Sustainability
	Multimodal Transportation			Economic Vitality
	Community Services			Other City Plan/Policy

Statement of Need:

This project is necessary to extend the life of the storm structures that bridge vehicular traffic over the creek systems. The existing galvanized pipe has deteriorated and will not support the road bed if a new system is not installed. There are approximately 37 bridge culverts throughout the city with diameters exceeding 24".

FY 2022 - Stratford Avenue and Fairchester Drive

FY 2023 - Woodhaven Drive & Jancie Road

FY 2024 - Scott Drive

FY 2025 - Shiloh Street

FY 2026 - Raider Lane

FY 2027 - Ashby Road/Ashby pond

Picture:

Funding Allocation	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	Totals
Infrastructure Maint/Repair/Upgrade	85,000	85,000	85,000	85,000	85,000	85,000	425,000
Total Costs	**$ 85,000**	**$ 85,000**	**$ 85,000**	**$ 85,000**	**$ 85,000**	**$ 85,000**	**$ 425,000**

Funding Sources	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	Totals
Stormwater Utility Fund	85,000	85,000	85,000	85,000	85,000	85,000	425,000
Total Funding	**$ 85,000**	**$ 85,000**	**$ 85,000**	**$ 85,000**	**$ 85,000**	**$ 85,000**	**$ 425,000**

Estimated Project Timeline		New Project	Responsible Department(s):			
Project Origination Date			Cable TV		Police	
Project Design Start Date			CD&P		PW Admin	
Construction Start Date			City Manager		PW Fleet	
Project Completion Date	Ongoing		Finance		PW Operations	
			Fire		PW Signs/Signal	
Financial Impacts			Historic		PW Stormwater	✓
Annual Revenue Generated:	$ -		Human Svc		PW Streets	✓
Annual Cost Savings:	$ -		IT		PW Transport	
Annual Increase in Operating Costs:	$ -		Parks & Rec		PW Wastewater	
Projected Future Savings:	$ -		Personnel		Schools	

PROJECT INFORMATION

Name: Ashby Pond Dredging & Retrofit | **Project #** 340-644430-580330

2035 Comprehensive Plan Reference: IU1.3.2 p. 144 | **2035 Comprehensive Plan Timeframe:** Short-Term

Comprehensive Plan Element

✓	Land Use	✓	Environment and Sustainability
	Multimodal Transportation		Economic Vitality
✓	Community Services		Other City Plan/Policy

Statement of Need:

When the Ashby Pond project was completed in 2011, the project did not include the complete removal of silt. Instead, only a portion was removed. Since then the City has taken steps to help the water quality through the installation of aeration bubblers and native plantings along the pond banks. 30% design plans for restoration of the channel that feeds the east side of the pond, and restoration of the inflow channel on the south side of the pond, as well as the pond dredging and retrofit were completed in FY21 & FY22. Stormwater Local Assistance Fund grants were applied for in FY22. This project will contribute to the TMDL pollutant load reduction for the City. All available grant funding opportunities will be pursued.

Picture:

Funding Allocation	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	Totals
Feasibility/Planning/Design/Engineering	175,000	-	-	-	-	-	-
Construction	-	1,575,000	-	-	-	-	1,575,000
Total Costs	**$ 175,000**	**$ 1,575,000**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 1,575,000**

Funding Sources	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	Totals
Financing	-	590,073	-	-	-	-	590,073
Grant	87,500	588,231	-	-	-	-	588,231
Stormwater Utility Fund	87,500	396,696	-	-	-	-	396,696
Total Funding	**$ 175,000**	**$ 1,575,000**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 1,575,000**

Estimated Project Timeline	
Project Origination Date	07/01/18
Project Design Start Date	06/30/19
Construction Start Date	07/01/21
Project Completion Date	06/30/23

Financial Impacts	
Annual Revenue Generated:	$ -
Annual Cost Savings:	$ -
Annual Increase in Operating Costs:	$ -
Projected Future Savings:	$ -

New Project

Responsible Department(s):			
Cable TV		Police	
CD&P		PW Admin	
City Manager		PW Fleet	
Finance		PW Operations	
Fire		PW Signs/Signal	
Historic		PW Stormwater	✓
Human Svc		PW Streets	
IT		PW Transport	
Parks & Rec		PW Wastewater	
Personnel		Schools	

PROJECT INFORMATION

Name: Plantation Parkway Culvert Repairs | **Project #** 320-644427-580330

2035 Comprehensive Plan Reference: IU1.3.2 p. 144 | **2035 Comprehensive Plan Timeframe:** Short-Term

Comprehensive Plan Element

	Land Use		✓	Environment and Sustainability
	Multimodal Transportation			Economic Vitality
✓	Community Services			Other City Plan/Policy

Statement of Need:

This project will replace the erosion/scour slab, riprap and repair the wing walls on the upstream and downstream ends of this double 10' diameter corrugated metal pipe culvert across two phases. FY23 funding will provide for repair of the eastern/outlet side headwall and wingwall, and outlet apron/plunge pool area. The wingwalls and headwalls will also be sealed with graffiti resistant paint.

Picture:

Funding Allocation	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	Totals
Construction	500,000	500,000	-	-	-	-	500,000
Total Costs	**$ 500,000**	**$ 500,000**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 500,000**

Funding Sources	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	Totals
Financing	500,000	500,000	-	-	-	-	500,000
Total Funding	**$ 500,000**	**$ 500,000**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 500,000**

Estimated Project Timeline		New Project	Responsible Department(s):			
Project Origination Date	07/01/19		Cable TV		Police	
Project Design Start Date	07/01/19		CD&P	✓	PW Admin	✓
Construction Start Date	07/01/21		City Manager		PW Fleet	
Project Completion Date	06/30/22		Finance		PW Operations	
			Fire		PW Signs/Signal	
Financial Impacts			Historic		PW Stormwater	✓
Annual Revenue Generated:	$ -		Human Svc		PW Streets	
Annual Cost Savings:	$ -		IT		PW Transport	
Annual Increase in Operating Costs:	$ -		Parks & Rec		PW Wastewater	
Projected Future Savings:	$ -		Personnel		Schools	

PROJECT INFORMATION

Name: Flood Mitigation Planning & Resiliency **Project #** --

2035 Comprehensive Plan Reference: NE2.1 pg 108 **2035 Comprehensive Plan Timeframe:** Long-Term

Comprehensive Plan Element

	Land Use		✓	Environment and Sustainability
	Multimodal Transportation			Economic Vitality
	Community Services			Other City Plan/Policy

Statement of Need:

This project supports the development of two flood mitigation initiatives. The first is a Flood Resilience Plan for the city. This plan provides project-based improvements for flood control and resilience, leverages nature-based infrastructure, considers all parts of a locality, includes coordination with other local and inter-jurisdictional activities, and is based on best available science. The plan will be developed to also provide credits towards FEMA's Community Rating System.

During the design of the Stafford Drive Stream Restoration Project, the effects to the floodplain were reviewed through hydraulic modeling. It was found that the culvert under Stafford Drive is a contributing factor in the floodplain impacts to the Mosby Woods condominium community. A flood study is proposed to evaluate the current condition of the Stafford Drive culvert and investigate options to improve the flood conditions in this area.
.
The city intends to apply for Community Flood Preparedness Fund grants for two projects which can, if approved, provide up to 75% funding for the flood preparedness plan, and 50% for the flood mitigation study. Development of a Flood Resilience Plan is a prerequisite to applying for any future grant funding for construction of a mitigation project, which can fund 50-70% of the project costs.

Picture:

Funding Allocation	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	Totals
Feasibility/Planning/Design/Engineering	-	225,000	-	-	-	-	225,000
Total Costs	**$ -**	**$ 225,000**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 225,000**

Funding Sources	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	Totals
State - Other	-	148,250	-	-	-	-	148,250
Stormwater Utility Fund	-	76,750	-	-	-	-	76,750
Total Funding	**$ -**	**$ 225,000**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 225,000**

Estimated Project Timeline		New Project
Project Origination Date	02/01/22	
Project Design Start Date	07/01/22	✓
Construction Start Date		
Project Completion Date	06/30/23	

Financial Impacts	
Annual Revenue Generated:	$ -
Annual Cost Savings:	$ -
Annual Increase in Operating Costs:	$ -
Projected Future Savings:	$ -

Responsible Department(s):			
Cable TV		Police	
CD&P		PW Admin	
City Manager		PW Fleet	
Finance		PW Operations	
Fire		PW Signs/Signal	
Historic		PW Stormwater	✓
Human Svc		PW Streets	
IT		PW Transport	
Parks & Rec		PW Wastewater	
Personnel		Schools	

PROJECT INFORMATION

Name: Northfax Linear Park Design **Project #** --

2035 Comprehensive Plan Reference: CCAC 2.3.5 p.52 **2035 Comprehensive Plan Timeframe:** Immediate

Comprehensive Plan Element

✓	Land Use	✓	Environment and Sustainability
✓	Multimodal Transportation	✓	Economic Vitality
	Community Services		Other City Plan/Policy

Statement of Need:

Funding is requested for consultant services to develop a unified stormwater strategy, landscape design and standards for the Northfax Linear Park as recommended in the Northfax Small Area Plan adopted in June 2020. This project will establish a phasable conceptual plan to be implemented across multiple properties and timelines. Final design and construction will occur incrementally as development proceeds on impacted parcels. A unified stormwater strategy and landscape plan are specifically recommended as implementation items to precede development of impacted parcels in the plan.

Picture:

Funding Allocation	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	Totals
Feasibility/Planning/Design/Engineering	-	80,000	-	-	-	-	80,000
Total Costs	**$ -**	**$ 80,000**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 80,000**

Funding Sources	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	Totals
Stormwater Utility Fund	-	80,000	-	-	-	-	80,000
Total Funding	**$ -**	**$ 80,000**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 80,000**

Estimated Project Timeline		New Project
Project Origination Date	06/23/20	
Project Design Start Date	07/01/22	
Construction Start Date		
Project Completion Date		

Financial Impacts	
Annual Revenue Generated:	$ -
Annual Cost Savings:	$ -
Annual Increase in Operating Costs:	$ -
Projected Future Savings:	$ -

Responsible Department(s):			
Cable TV		Police	
CD&P	✓	PW Admin	
City Manager		PW Fleet	
Finance		PW Operations	
Fire		PW Signs/Signal	
Historic		PW Stormwater	✓
Human Svc		PW Streets	
IT		PW Transport	✓
Parks & Rec	✓	PW Wastewater	
Personnel		Schools	

PROJECT INFORMATION

Name: Stormwater & Wastewater Plan Review | **Project #** 340-644439-580330

2035 Comprehensive Plan Reference: IU1.3.1 p.144 | **2035 Comprehensive Plan Timeframe:** Ongoing

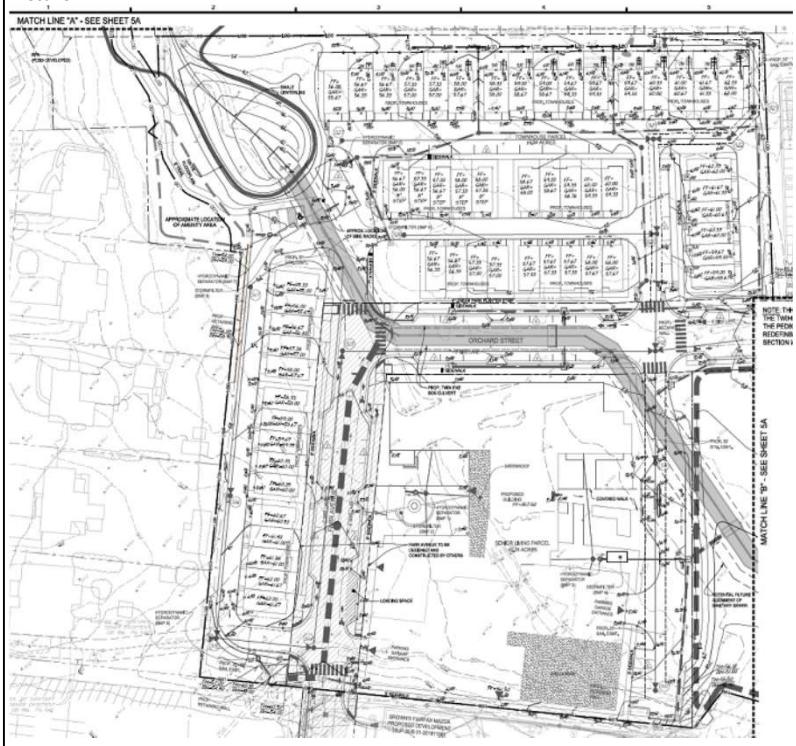
Comprehensive Plan Element

✓	Land Use		✓	Environment and Sustainability
	Multimodal Transportation			Economic Vitality
✓	Community Services			Other City Plan/Policy

Statement of Need:

Stormwater quality and quantity designs for larger development projects are becoming more complex due to the increasingly urban nature of the City. Wastewater contributions to the City's system also increase through development projects. This project will allow for an additional layer of plan review assistance by specialized storm/waste water engineering firms to ensure that regulatory requirements are met, no adverse stormwater impacts to the proposed development or surrounding properties will occur, and wastewater capacities are adequate.

Picture:



Funding Allocation	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	Totals
Feasibility/Planning/Design/Engineering	75,000	40,000	80,000	80,000	80,000	80,000	360,000
Total Costs	**$ 75,000**	**$ 40,000**	**$ 80,000**	**$ 80,000**	**$ 80,000**	**$ 80,000**	**$ 360,000**

Funding Sources	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	Totals
Stormwater Utility Fund	50,000	-	55,000	55,000	55,000	55,000	220,000
Wastewater Fund	25,000	40,000	25,000	25,000	25,000	25,000	140,000
Total Funding	**$ 75,000**	**$ 40,000**	**$ 80,000**	**$ 80,000**	**$ 80,000**	**$ 80,000**	**$ 360,000**

Estimated Project Timeline		New Project	Responsible Department(s):			
Project Origination Date			Cable TV		Police	
Project Design Start Date			CD&P		PW Admin	
Construction Start Date			City Manager		PW Fleet	
Project Completion Date	Ongoing		Finance		PW Operations	
			Fire		PW Signs/Signal	
Financial Impacts			Historic		PW Stormwater	✓
Annual Revenue Generated:	$ -		Human Svc		PW Streets	
Annual Cost Savings:	$ -		IT		PW Transport	
Annual Increase in Operating Costs:	$ -		Parks & Rec		PW Wastewater	✓
Projected Future Savings:	$ -		Personnel		Schools	

PROJECT INFORMATION

Name: Municipal Separate Storm Sewer System (MS4) **Project #** 340-644424-580330

2035 Comprehensive Plan Reference: IU1.3.1 p. 144 **2035 Comprehensive Plan Timeframe:** Ongoing

Comprehensive Plan Element

	Land Use		✓	Environment and Sustainability
	Multimodal Transportation			Economic Vitality
✓	Community Services			Other City Plan/Policy

Statement of Need:

This project is required to comply with the 2018-2023 Municipal Separate Storm Sewer System (MS4) permit requirements. The new permit has new significant milestones that the City must meet each year of the 5 year permit term. The permit requirements include updating GIS files for DEQ, updating the City's website, revising the 5 year program plan, updating and implementing nutrient management plans, conducting outfall screening, conducting public outreach & education, and compiling our MS4 annual report. Funding will also provide for inspections, materials/equipment/signage, and staff training necessary to maintain Stormwater Pollution Prevention Plan compliance at the City's Property Yard facility. This permit will be active from 2018-2023, with this fiscal year being permit year 5.

Picture:

Funding Allocation	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	Totals
Feasibility/Planning/Design/Engineering	155,000	155,000	165,000	165,000	165,000	165,000	815,000
Total Costs	**$ 155,000**	**$ 155,000**	**$ 165,000**	**$ 165,000**	**$ 165,000**	**$ 165,000**	**$ 815,000**

Funding Sources	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	Totals
Financing	120,000	-	-	-	-	-	-
Stormwater Utility Fund	35,000	155,000	165,000	165,000	165,000	165,000	815,000
Total Funding	**$ 155,000**	**$ 155,000**	**$ 165,000**	**$ 165,000**	**$ 165,000**	**$ 165,000**	**$ 815,000**

Estimated Project Timeline		New Project	Responsible Department(s):			
Project Origination Date			Cable TV		H-17	
Project Design Start Date			CD&P		PW Admin	
Construction Start Date			City Manager		PW Fleet	
Project Completion Date	Ongoing		Finance		PW Operations	
			Fire		PW Signs/Signal	
Financial Impacts			Historic		PW Stormwater	✓
Annual Revenue Generated:	$ -		Human Svc		PW Streets	
Annual Cost Savings:	$ -		IT		PW Transport	
Annual Increase in Operating Costs:	$ -		Parks & Rec		PW Wastewater	
Projected Future Savings:	$ -		Personnel		Schools	

PROJECT INFORMATION

Name: Private BMP/SWM Inspection **Project #** 340-644432-580330

2035 Comprehensive Plan Reference: IU1.3.1 p. 144 **2035 Comprehensive Plan Timeframe:** Ongoing

Comprehensive Plan Element

	Land Use	✓	Environment and Sustainability
	Multimodal Transportation		Economic Vitality
✓	Community Services		Other City Plan/Policy

Statement of Need:

This project provides for the annual inspection of all the private Best Management Practice/Storm Water Management (BMP/SWM) systems throughout the City. Currently there are 440 privately owned facilities in inventory. Annual inspection of these facilities is required under the Virginia Pollution Discharge Elimination System (VPDES) and Phase II-Municipal Separate Storm Sewer System (MS4) permit. While BMP facilities are engineered to meet state requirements for pollutant load reduction and water quantity, their continued performance is dependent upon inspections and maintenance. The number of facilities in inventory will continue to increase with future development / redevelopment of properties.

Picture:

Funding Allocation	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	Totals
Infrastructure Maint/Repair/Upgrade	120,000	130,000	130,000	135,000	135,000	140,000	670,000
Total Costs	**$ 120,000**	**$ 130,000**	**$ 130,000**	**$ 135,000**	**$ 135,000**	**$ 140,000**	**$ 670,000**

Funding Sources	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	Totals
Financing	120,000	-	-	-	-	-	-
Stormwater Utility Fund	-	130,000	130,000	135,000	135,000	140,000	670,000
Total Funding	**$ 120,000**	**$ 130,000**	**$ 130,000**	**$ 135,000**	**$ 135,000**	**$ 140,000**	**$ 670,000**

Estimated Project Timeline		New Project	Responsible Department(s):			
Project Origination Date			Cable TV		Police	
Project Design Start Date			CD&P		PW Admin	
Construction Start Date			City Manager		PW Fleet	
Project Completion Date	Ongoing		Finance		PW Operations	
			Fire		PW Signs/Signal	
Financial Impacts			Historic		PW Stormwater	✓
Annual Revenue Generated:	$ -		Human Svc		PW Streets	
Annual Cost Savings:	$ -		IT		PW Transport	
Annual Increase in Operating Costs:	$ -		Parks & Rec		PW Wastewater	
Projected Future Savings:	$ -		Personnel		Schools	

PROJECT INFORMATION

Name: Public BMP/SWM Inspection and Maintenance **Project #** 340-644415-580330

2035 Comprehensive Plan Reference: IU1.3.1 p. 144 **2035 Comprehensive Plan Timeframe:** Ongoing

Comprehensive Plan Element

	Land Use	✓	Environment and Sustainability
	Multimodal Transportation		Economic Vitality
✓	Community Services		Other City Plan/Policy

Statement of Need:

This project provides for the annual inspection and maintenance of all the public Best Management Practice/Storm Water Management (BMP/SWM) systems throughout the City, including prior stream restoration project areas. There are currently 38 City owned and maintained facilities, plus two stream restoration areas that are inspected annually. Annual inspection of these facilities is required under the Virginia Pollution Discharge Elimination System (VPDES), Phase II-Municipal Separate Storm Sewer System (MS4) permit, and grant funding agreements with Virginia Department of Environmental Quality. Maintenance of BMP facilities is necessary to ensure that they continue to function as designed to provide water quality and quantity control. Implementation of Best Management Practices is required to offset the impacts of development activity, and the number of facilities in inventory will increase with future development/redevelopment of City properties, and roadway / transportation projects.

Picture:

Funding Allocation	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	Totals
Infrastructure Maint/Repair/Upgrade	130,000	130,000	135,000	135,000	140,000	140,000	680,000
Total Costs	**$ 130,000**	**$ 130,000**	**$ 135,000**	**$ 135,000**	**$ 140,000**	**$ 140,000**	**$ 680,000**

Funding Sources	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	Totals
Financing	110,000	-	-	-	-	-	-
Stormwater Utility Fund	20,000	130,000	135,000	135,000	140,000	140,000	680,000
Total Funding	**$ 130,000**	**$ 130,000**	**$ 135,000**	**$ 135,000**	**$ 140,000**	**$ 140,000**	**$ 680,000**

Estimated Project Timeline		New Project	Responsible Department(s):			
Project Origination Date			Cable TV		Police	
Project Design Start Date			CD&P		PW Admin	
Construction Start Date			City Manager		PW Fleet	
Project Completion Date	Ongoing		Finance		PW Operations	
			Fire		PW Signs/Signal	
Financial Impacts			Historic		PW Stormwater	✓
Annual Revenue Generated:	$ -		Human Svc		PW Streets	
Annual Cost Savings:	$ -		IT		PW Transport	
Annual Increase in Operating Costs:	$ -		Parks & Rec		PW Wastewater	
Projected Future Savings:	$ -		Personnel		Schools	

PROJECT INFORMATION

Name: Stream Evaluation and Restoration **Project #** 340-644422-580330

2035 Comprehensive Plan Reference: IU1.3.1 p. 144 **2035 Comprehensive Plan Timeframe:** Ongoing

Comprehensive Plan Element

✓	Land Use	✓	Environment and Sustainability
	Multimodal Transportation		Economic Vitality
✓	Community Services	✓	Other City Plan/Policy

Statement of Need:

The Accotink Creek Stream Stability Assessment and Prioritization Plan was developed in October 2007 and has been used as a guide to select future stream restoration project areas. This report is now 15-years old and an update is needed. A comprehensive stream condition assessment is proposed for FY23 which will document improvements made through completed environmental projects and help prioritize stream segments for future restoration projects. All grant opportunities will be explored for this project.

Picture:

Funding Allocation	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	Totals
Feasibility/Planning/Design/Engineering	150,000	200,000	200,000	-	200,000	200,000	800,000
Construction	2,200,000	-	-	2,500,000	1,300,000	-	3,800,000
Total Costs	**$ 2,350,000**	**$ 200,000**	**$ 200,000**	**$ 2,500,000**	**$ 1,500,000**	**$ 200,000**	**$ 4,600,000**

Funding Sources	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	Totals
Financing	-	-	-	250,000	-	-	250,000
Grant	1,175,000	-	-	1,250,000	750,000	-	2,000,000
Stormwater Utility Fund	1,175,000	200,000	200,000	1,000,000	750,000	200,000	2,350,000
Total Funding	**$ 2,350,000**	**$ 200,000**	**$ 200,000**	**$ 2,500,000**	**$ 1,500,000**	**$ 200,000**	**$ 4,600,000**

Estimated Project Timeline		New Project
Project Origination Date		
Project Design Start Date		
Construction Start Date		
Project Completion Date	Ongoing	

Financial Impacts	
Annual Revenue Generated:	$ -
Annual Cost Savings:	$ -
Annual Increase in Operating Costs:	$ -
Projected Future Savings:	$ -

Responsible Department(s):			
Cable TV		Police	
CD&P		PW Admin	
City Manager		PW Fleet	
Finance		PW Operations	
Fire		PW Signs/Signal	
Historic		PW Stormwater	✓
Human Svc		PW Streets	
IT		PW Transport	
Parks & Rec		PW Wastewater	
Personnel		Schools	

PROJECT INFORMATION

Name: TMDL Action Plans **Project #** 340-644426-580330

2035 Comprehensive Plan Reference: IU1.3.1 p. 144 **2035 Comprehensive Plan Timeframe:** Ongoing

Comprehensive Plan Element

	Land Use		✓	Environment and Sustainability
	Multimodal Transportation			Economic Vitality
✓	Community Services			Other City Plan/Policy

Statement of Need:

This project is needed to comply with the annual milestone requirements of the Municipal Separate Storm Sewer System (MS4) permit and state mandated TMDL allocations for waterways located within the regional watershed. A Chesapeake Bay Total Maximum Daily Load (TMDL) action plan was completed in 2015 and updated in 2019, as well as nine additional local TMDLs allocated to the City. Each action plan outlines what the pollutant of concern (POC) loads and required reductions are for the City to meet the permit requirements, and how the City will achieve them. The City met the Chesapeake Bay TMDL 5% reduction requirements for 2018. The Chesapeake Bay TMDL requires that the City achieve a 40% pollutant reduction goal by 2023, and 100% pollutant reduction goal by 2028. This project will provide for design and construction of stormwater outfall channel retrofits, and BMP retrofits. Both types of projects will provide for TMDL credit towards the City's pollutant reduction goals. Alternative compliance methods will be explored, including nutrient credit purchases. This project will also provide for development of a required chloride TMDL Action Plan. All grant opportunities will be explored.

Picture:

Funding Allocation	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	Totals
Feasibility/Planning/Design/Engineering	100,000	100,000	100,000	100,000	100,000	100,000	500,000
Construction	200,000	400,000	400,000	400,000	400,000	400,000	2,000,000
Total Costs	**$ 300,000**	**$ 500,000**	**$ 500,000**	**$ 500,000**	**$ 500,000**	**$ 500,000**	**$ 2,500,000**

Funding Sources	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	Totals
Financing	300,000	-	-	-	-	-	-
Grant	-	477,580	-	-	-	-	477,580
Stormwater Utility Fund	-	22,420	500,000	500,000	500,000	500,000	2,022,420
Total Funding	**$ 300,000**	**$ 500,000**	**$ 500,000**	**$ 500,000**	**$ 500,000**	**$ 500,000**	**$ 2,500,000**

Estimated Project Timeline		New Project	Responsible Department(s):			
Project Origination Date			Cable TV		Police	
Project Design Start Date			CD&P		PW Admin	
Construction Start Date			City Manager		PW Fleet	
Project Completion Date	Ongoing		Finance		PW Operations	
			Fire		PW Signs/Signal	
Financial Impacts			Historic		PW Stormwater	✓
Annual Revenue Generated:	$ -		Human Svc		PW Streets	
Annual Cost Savings:	$ -		IT		PW Transport	
Annual Increase in Operating Costs:	$ -		Parks & Rec		PW Wastewater	
Projected Future Savings:	$ -		Personnel		Schools	

PROJECT INFORMATION

Name: Storm Sewer Evaluation & Update Program | **Project #** 340-644407-580330

2035 Comprehensive Plan Reference: IU1.3.2 p.144 | **2035 Comprehensive Plan Timeframe:** Ongoing

Comprehensive Plan Element

	Land Use	✓	Environment and Sustainability
	Multimodal Transportation		Economic Vitality
✓	Community Services		Other City Plan/Policy

Statement of Need:

A multi-phase evaluation program to prioritize areas for CCTV camera inspection of pipes and manholes was developed in FY22. This project will continue inspections to provide asset condition data and guide future maintenance and upgrade priorities. This project will also allow for collection of updated storm sewer inventory data that will be accessible through GIS. Data to be collected will include coordinate location, pipe size, material, depth, inlet/manhole type, and pipe connectivity layout.

Picture:

Funding Allocation	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	Totals
Feasibility/Planning/Design/Engineering	-	250,000	250,000	250,000	250,000	250,000	1,250,000
Total Costs	**$ -**	**$ 250,000**	**$ 250,000**	**$ 250,000**	**$ 250,000**	**$ 250,000**	**$ 1,250,000**

Funding Sources	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	Totals
Financing	-	150,000	150,000	150,000	-	-	450,000
Stormwater Utility Fund	-	100,000	100,000	100,000	250,000	250,000	800,000
Total Funding	**$ -**	**$ 250,000**	**$ 250,000**	**$ 250,000**	**$ 250,000**	**$ 250,000**	**$ 1,250,000**

Estimated Project Timeline		New Project	Responsible Department(s):			
Project Origination Date			Cable TV		Police	
Project Design Start Date			CD&P		PW Admin	
Construction Start Date			City Manager		PW Fleet	
Project Completion Date	Ongoing		Finance		PW Operations	
			Fire		PW Signs/Signal	
Financial Impacts			Historic		PW Stormwater	✓
Annual Revenue Generated:	$ -		Human Svc		PW Streets	
Annual Cost Savings:	$ -		IT		PW Transport	
Annual Increase in Operating Costs:	$ -		Parks & Rec		PW Wastewater	
Projected Future Savings:	$ -		Personnel		Schools	

Attachment 2 – CFPF Grant Manual Appendix A

Attachment 2 – Outline

1. Appendix A: Application Form for Grant Request for All Categories

Attachment 2.1

Appendix A: Application Form for Grant Request for All Categories

Appendix A: Application Form for Grant Requests for All Categories

Virginia Department of Conservation and Recreation
Virginia Community Flood Preparedness Fund Grant Program

Name of Local Government:
City of Fairfax

Category of Grant Being Applied for (check one):

____**Capacity Building/Planning**

_____**Project**

__X__**Study**

NFIP/DCR Community Identification Number (CID) 515524

If a state or federally recognized Indian tribe, Name of tribe_____

Name of Authorized Official: Robert A. Stalzer, City Manager

Signature of Authorized Official: _____

Mailing Address (1): 10455 Armstrong St

Mailing Address (2): _____

City: Fairfax **State:** VA **Zip:** 22030

Telephone Number: (703) 385-7850 **Cell Phone Number:** (____) _____

Email Address: rob.stalzer@fairfaxva.gov

Contact Person (If different from authorized official): Satoshi Eto, Public Works Program Mgr.

Mailing Address (1): 10455 Armstrong St

Mailing Address (2): _____

City: Fairfax **State:** VA **Zip:** 22030

Telephone Number: (703) 273-6073 **Cell Phone Number:** (571) 641-0839

Email Address: satoshi.eto@fairfaxva.gov

Is the proposal in this application intended to benefit a low-income geographic area as defined in the Part 1 Definitions? Yes ____ No X

Categories (select applicable project):

Project Grants (Check All that Apply)

- ☐ Acquisition of property (or interests therein) and/or structures for purposes of allowing floodwater inundation, strategic retreat of existing land uses from areas vulnerable to flooding; the conservation or enhancement of natural flood resilience resources; or acquisition of structures, provided the acquired property will be protected in perpetuity from further development.
- ☐ Wetland restoration.
- ☐ Floodplain restoration.
- ☐ Construction of swales and settling ponds.
- ☐ Living shorelines and vegetated buffers.
- ☐ Structural floodwalls, levees, berms, flood gates, structural conveyances.
- ☐ Storm water system upgrades.
- ☐ Medium and large scale Low Impact Development (LID) in urban areas.
- ☐ Permanent conservation of undeveloped lands identified as having flood resilience value by *ConserveVirginia* Floodplain and Flooding Resilience layer or a similar data driven analytic tool.
- ☐ Dam restoration or removal.
- ☐ Stream bank restoration or stabilization.
- ☐ Restoration of floodplains to natural and beneficial function.
- ☐ Developing flood warning and response systems, which may include gauge installation, to notify residents of potential emergency flooding events.

Study Grants (Check All that Apply)

- ☐ Studies to aid in updating floodplain ordinances to maintain compliance with the NFIP or to incorporate higher standards that may reduce the risk of flood damage. This must include establishing processes for implementing the ordinance, including but not limited to, permitting, record retention, violations, and variances. This may include revising a floodplain ordinance when the community is getting new Flood Insurance Rate Maps (FIRMs), updating a floodplain ordinance to include floodplain setbacks or freeboard, or correcting issues identified in a Corrective Action Plan.
- ☐ Revising other land use ordinances to incorporate flood protection and mitigation goals, standards and practices.
- ☐ Conducting hydrologic and hydraulic studies of floodplains. Applicants who create new maps must apply for a Letter of Map Revision or a Physical Map Revision through the Federal Emergency Management Agency (FEMA). For example, a local government might conduct a hydrologic and hydraulic study for an area that had not been studied because the watershed is less than one square mile. Modeling the floodplain in an area that has numerous letters of map change that suggest the current map might not be fully accurate or doing a detailed flood study for an A Zone is another example.
- ☐ Studies and Data Collection of Statewide and Regional Significance.
- ☐ Revisions to existing resilience plans and modifications to existing comprehensive and hazard.
- ☒ Other relevant flood prevention and protection project or study.

Capacity Building and Planning Grants

- ☐ Floodplain Staff Capacity.
- ☐ Resilience Plan Development
  - ☐ Revisions to existing resilience plans and modifications to existing comprehensive and hazard mitigation plans.
  - ☐ Resource assessments, planning, strategies and development.
    - o Policy management and/or development.
    - o Stakeholder engagement and strategies.

Location of Project (Include Maps): City of Fairfax: Mosby Woods

NFIP Community Identification Number (CID#):(See appendix F 515524

Is Project Located in an NFIP Participating Community? ☒ Yes ☐ No

Is Project Located in a Special Flood Hazard Area? ☒ Yes ☐ No

Flood Zone(s) (If Applicable): Zone AE, Zone X

Flood Insurance Rate Map Number(s) (If Applicable): 5155240002D

Total Cost of Project: $48,570.66

Total Amount Requested $24,285.33

Attachment 3 – CFPF Grant Manual Appendix C/D

Attachment 3 – Outline

1. Appendix C: Scoring Criteria for Studies
2. Appendix D: Checklist All Categories
3. Mosby Woods Floodplain Improvements Study Area FIRM Map
4. City of Fairfax – Current Floodplain Ordinance (4.15 Floodplain Regulations)
5. City of Fairfax – 2035 Comprehensive Plan
6. Study Area – ADAPT VA Vulnerability Map
7. United States Census Median Household Income Virginia & City of Fairfax

Attachment 3.1

Appendix C: Scoring Criteria for Studies

Appendix C: Scoring Criteria for Studies

Virginia Department of Conservation and Recreation
Virginia Community Flood Preparedness Fund Grant Program

Applicant Name:	City of Fairfax	
Eligibility Information		
Criterion	**Description**	**Check One**
1. Is the applicant a local government (including counties, cities, towns, municipal corporations, authorities, districts, commissions, or political subdivisions created by the General Assembly or pursuant to the Constitution or laws of the Commonwealth, or any combination of these)?		
Yes	Eligible for consideration	X
No	Not eligible for consideration	
2. Does the local government have an approved resilience plan and has provided a copy or link to the plan with this application?		
Yes	Eligible for consideration under all categories	
No	Eligible for consideration for studies, capacity building, and planning only	X
3. If the applicant is <u>not a town, city, or county</u>, are letters of support from all affected local governments included in this application?		
Yes	Eligible for consideration	
No	Not eligible for consideration	
4. Has this or any portion of this project been included in any application or program previously funded by the Department?		
Yes	Not eligible for consideration	
No	Eligible for consideration	X
5. Has the applicant provided evidence of an ability to provide the required matching funds?		
Yes	Eligible for consideration	X
No	Not eligible for consideration	
N/A	Match not required	

Studies Eligible for Consideration	☒ Yes ☐ No

Applicant Name:	

Scoring Information		
Criterion	**Point Value**	**Points Awarded**
6. Eligible Studies (Select all that apply)		
Revising floodplain ordinances to maintain compliance with the NFIP or to incorporate higher standards that may reduce the risk of flood damage. This must include establishing processes for implementing the ordinance, including but not limited to, permitting, record retention, violations, and variances. This may include revising a floodplain ordinance when the community is getting new Flood Insurance Rate Maps (FIRMs), updating a floodplain ordinance to include floodplain setbacks or freeboard, or correcting issues identified in a Corrective Action Plan.	**30**	
Creating tools or applications to identify, aggregate, or display information on flood risk or creating a crowd-sourced mapping platform that gathers data points about real-time flooding. This could include a locally or regionally based web-based mapping product that allows local residents to better understand their flood risk.	**15**	
Conducting hydrologic and hydraulic studies of floodplains. Applicants who create new maps must apply for a Letter of Map Revision or a Physical Map Revision through the Federal Emergency Management Agency (FEMA).	**35**	
Studies and Data Collection of Statewide and Regional Significance. Funding of studies of statewide and regional significance and proposals will be considered for the following types of studies:		
☐ Updating precipitation data and IDF information (rain intensity, duration, frequency estimates) including such data at a sub-state or regional scale on a periodic basis.	**45**	
☐ Regional relative sea level rise projections for use in determining future impacts.	**45**	
☐ Vulnerability analysis either statewide or regionally to state transportation, water supply, water treatment, impounding structures, or other significant and vital infrastructure from flooding.	**45**	
☐ Flash flood studies and modeling in riverine regions of the state.	**45**	
☐ Statewide or regional stream gauge monitoring to include expansion of existing gauge networks.	**45**	

☐ New or updated delineations of areas of recurrent flooding, stormwater flooding, and storm surge vulnerability in coastal areas that include projections for future conditions based on sea level rise, more intense rainfall events, or other relevant flood risk factors.	**45**	
☐ Regional flood studies in riverine communities that may include watershed-scale evaluation, updated estimates of rainfall intensity, or other information.	**50**	X
☐ Regional hydrologic and hydraulic studies of floodplains.	**45**	
☐ Studies of potential land use strategies that could be implemented by a local government to reduce or mitigate damage from coastal or riverine flooding.	**40**	
☐ Other proposals that will significantly improve protection from flooding on a statewide or regional basis	**35**	
7. Is the study area socially vulnerable? (Based on ADAPT VA's Social Vulnerability Index Score.)		
Very High Social Vulnerability (More than 1.5)	**15**	
High Social Vulnerability (1.0 to 1.5)	**12**	
Moderate Social Vulnerability (0.0 to 1.0)	**8**	
Low Social Vulnerability (-1.0 to 0.0)	**0**	X
Very Low Social Vulnerability (Less than -1.0)	**0**	
8. Is the proposed study part of an effort to join or remedy the community's probation or suspension from the NFIP?		
Yes	**10**	
No	**0**	X
9. Is the proposed study in a low-income geographic area as defined in this manual?		
Yes	**10**	
No	**0**	X
10. Projects eligible for funding may also reduce nutrient and sediment pollution to local waters and the Chesapeake Bay and assist the Commonwealth in achieving local and/or Chesapeake Bay TMDLs. Does the proposed project include implementation of one or more best management practices with a nitrogen, phosphorus, or sediment reduction efficiency established by the Virginia Department of Environmental Quality or the Chesapeake Bay Program Partnership in support of the Chesapeake Bay TMDL Phase III Watershed Implementation Plan?		
Yes	**5**	
No	**0**	X
Total Points		50

Attachment 3.2

Appendix D: Checklist All Categories

Appendix D: Checklist All Categories

Virginia Department of Conservation and Recreation

Community Flood Preparedness Fund Grant Program

Scope of Work Narrative	
Supporting Documentation	**Included**
Detailed map of the project area(s) (Projects/Studies)	☒ Yes ☐ No ☐ N/A
FIRMette of the project area(s) (Projects/Studies)	☒ Yes ☐ No ☐ N/A
Historic flood damage data and/or images (Projects/Studies)	☐ Yes ☐ No ☒ N/A
A link to or a copy of the current floodplain ordinance	☒ Yes ☐ No ☐ N/A
Non-Fund financed maintenance and management plan for project extending a minimum of 5 years from project close	☐ Yes ☐ No ☒ N/A
A link to or a copy of the current hazard mitigation plan	☐ Yes ☐ No ☒ N/A
A link to or a copy of the current comprehensive plan	☒ Yes ☐ No ☐ N/A
Social vulnerability index score(s) for the project area from ADAPT VA's Virginia Vulnerability Viewer	☒ Yes ☐ No ☐ N/A
If applicant is not a town, city, or county, letters of support from affected communities	☐ Yes ☐ No ☒ N/A
Completed Scoring Criteria Sheet in Appendix B, C, or D	☒ Yes ☐ No ☐ N/A
Budget Narrative	
Supporting Documentation	**Included**
Authorization to request funding from the Fund from governing body or chief executive of the local government	☒ Yes ☐ No ☐ N/A
Signed pledge agreement from each contributing organization	☐ Yes ☐ No ☒ N/A

Attachment 3.3

Mosby Woods Floodplain Improvements Study Area FIRM Map

NOTES TO USERS

This map is for use in administering the National Flood Insurance Program. It does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size. The **community map repository** should be consulted for possible updated or additional flood hazard information.

To obtain more detailed information in areas where **Base Flood Elevations** (BFEs) and/or **floodways** have been determined, users are encouraged to consult the Flood Profiles, Floodway Data and/or Summary of Stillwater Elevations tables contained within the Flood Insurance Study (FIS) report that accompanies this FIRM. Users should be aware that BFEs shown on the FIRM represent rounded whole-foot elevations. These BFEs are intended for flood insurance rating purposes only and should not be used as the sole source of flood elevation information. Accordingly, flood elevation data presented in the FIS report should be utilized in conjunction with the FIRM for purposes of construction and/or floodplain management.

Coastal Base Flood Elevations shown on this map apply only landward of 0.0' National Geodetic Vertical Datum of 1929 (NGVD 29). Users of this FIRM should be aware that coastal flood elevations are also provided in the Summary of Stillwater Elevations tables in the Flood Insurance Study report for this jurisdiction. Elevations shown in the Summary of Stillwater Elevations tables should be used for construction and/or floodplain management purposes when they are higher than the elevations shown on this FIRM.

Boundaries of the **floodways** were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent floodway data are provided in the Flood Insurance Study report for this jurisdiction.

Certain areas not in Special Flood Hazard Areas may be protected by **flood control structures.** Refer to Section 2.4 "Flood Protection Measures" of the Flood Insurance Study report for information on flood control structures in this jurisdiction.

The **projection** used in the preparation of this map was Universal Transverse Mercator (UTM) zone 18. The **horizontal datum** was NAD 83, GRS80 spheroid. Differences in datum, spheroid, projection or UTM zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of this FIRM.

Flood elevations on this map are referenced to the National Geodetic Vertical Datum of 1929. These flood elevations must be compared to structure and ground elevations referenced to the same **vertical datum**. For information regarding conversion between the National Geodetic Vertical Datum of 1929 and the North American Vertical Datum of 1988, visit the National Geodetic Survey website at www.ngs.noaa.gov or contact the National Geodetic Survey at the following address:

Spatial Reference System Division
National Geodetic Survey, NOAA
Silver Spring Metro Center
1315 East-West Highway
Silver Spring, Maryland 20910
(301) 713-3191

To obtain current elevation, description, and/or location information for **bench marks** shown on this map, please contact the Information Services Branch of the National Geodetic Survey at **(301) 713-3242**, or visit their website at www.ngs.noaa.gov.

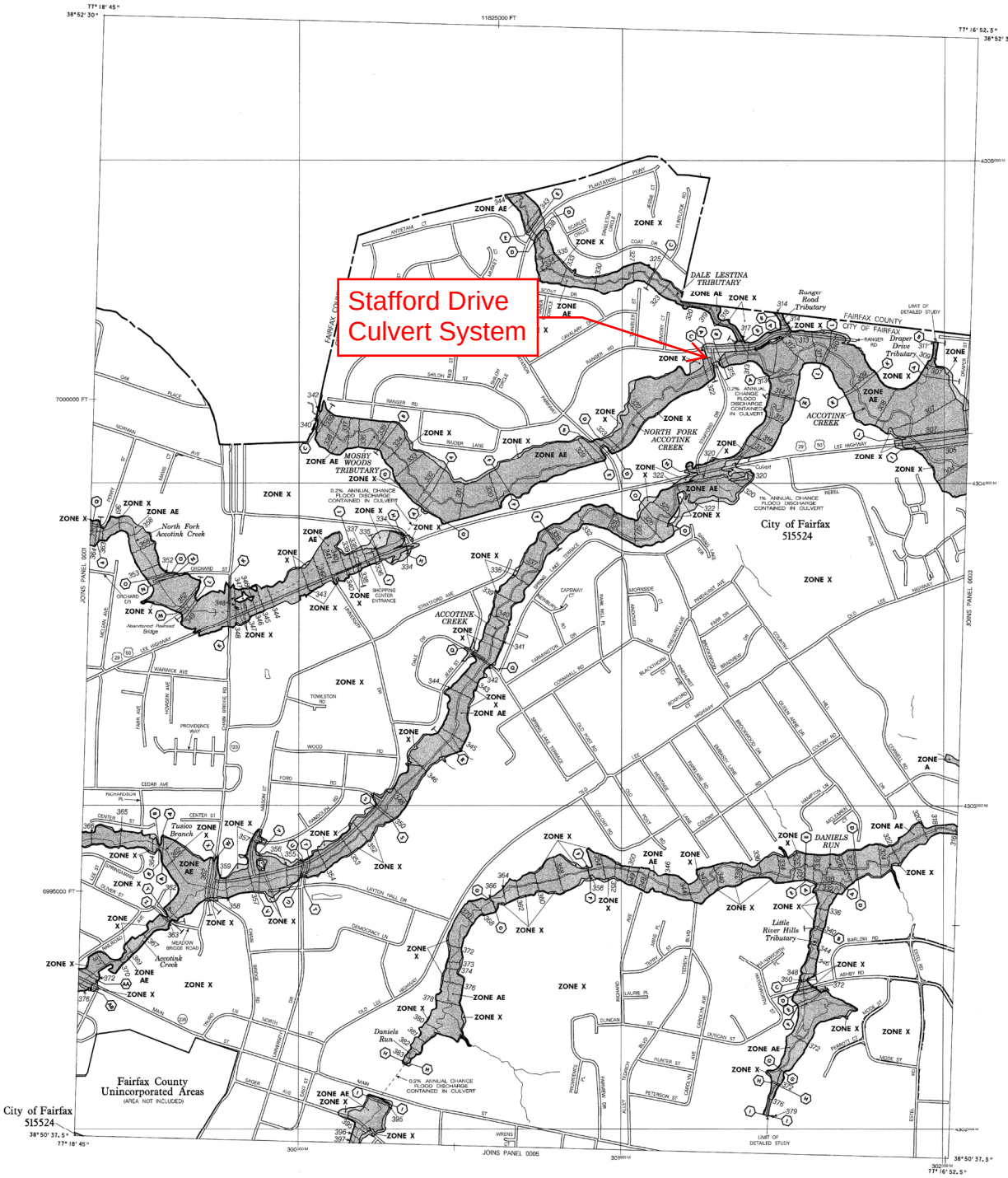
Base map information shown on this FIRM was provided in digital format by the City of Fairfax, Virginia. This information was photogrammetrically compiled at a scale of 1:1,200 from aerial photography dated March 1997.

Corporate limits shown on this map are based on the best data available at the time of publication. Because changes due to annexations or de-annexations may have occurred after this map was published, map users should contact appropriate community officials to verify current corporate limit locations.

Please refer to the separately printed **Map Index** for an overview map showing the layout of map panels for this jurisdiction.

Contact the **FEMA Map Service Center** at 1-800-358-9616 for information on available products associated with this FIRM. Available products may include previously issued Letters of Map Change, a Flood Insurance Study report, and/or digital versions of this map. The FEMA Map Service Center may also be reached by Fax at 1-800-358-9620 and their website at http://www.msc.fema.gov.

If you have **questions about this map** or questions concerning the National Flood Insurance Program in general, please call **1-877-FEMA MAP** (1-877-336-2627) or visit the FEMA website at http://www.fema.gov.



LEGEND

SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

ZONE A No Base Flood Elevations determined.

ZONE AE Base Flood Elevations determined.

ZONE AH Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.

ZONE AO Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.

ZONE AR Special Flood Hazard Area formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.

ZONE A99 Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.

ZONE V Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.

ZONE VE Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

ZONE X Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

OTHER AREAS

ZONE X Areas determined to be outside the 0.2% annual chance floodplain.

ZONE D Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

- 1% annual chance floodplain boundary
- 0.2% annual chance floodplain boundary
- Floodway boundary
- Zone D boundary
- CBRS and OPA boundary
- Boundary dividing Special Flood Hazard Area Zones and boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or flood velocities
- 513 Base Flood Elevation line and value; elevation in feet*
- (EL. 987) Base Flood Elevation value where uniform within zone; elevation in feet*

*Referenced to the National Geodetic Vertical Datum of 1929

- A–A Cross section line
- 23–23 Transect line
- 97°07'30", 32°22'30" Geographic coordinates referenced to the North American Datum of 1983 (NAD 83)
- 4278000 M 1000-meter Universal Transverse Mercator grid values, zone 18
- 6000000 FT 5000-foot grid ticks: Virginia State Plane coordinate system, north zone (FIPSZONE 4501), Lambert Conformal Conic projection
- DX5610 × Bench mark (see explanation in Notes to Users section of this FIRM panel)
- M1.5 River Mile

MAP REPOSITORY

Fairfax City Hall, 10455 Armstrong Street, Room 204, Fairfax, Virginia 22030 (Maps available for reference only, not for distribution.)

INITIAL IDENTIFICATION
May 5, 1970
FLOOD HAZARD BOUNDARY MAP REVISIONS
None
FLOOD INSURANCE RATE MAP EFFECTIVE
December 23, 1971
FLOOD INSURANCE RATE MAP REVISIONS

October 31, 1975 – to reflect curvilinear flood boundary and to add Special Flood Hazard Areas.

March 2, 1993 – to update map format.

February 19, 2003 – to update corporate limits, and roads and road names, to change Base Flood Elevations, Special Flood Hazard Areas and zone designations, to add Special Flood Hazard Areas and Base Flood Elevations.

June 2, 2006 – to correct the referenced vertical datum.

To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

MAP SCALE 1" = 500'
250 0 500 1000 FEET
150 0 150 300 METERS

NFIP NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0002D

FIRM
FLOOD INSURANCE RATE MAP

CITY OF
FAIRFAX,
VIRGINIA
(INDEPENDENT CITY)

PANEL 2 OF 6

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
FAIRFAX, CITY OF	515524	0002	D

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
5155240002D

MAP REVISED
JUNE 2, 2006

Federal Emergency Management Agency

Attachment 3.4

City of Fairfax – Current Floodplain Ordinance (4.15 Floodplain Regulations)

§4.14.6. Radioactivity

There shall be no radioactive emission that would be dangerous to health.

§4.14.7. Electrical interference

There shall be no electrical disturbance adversely affecting the operation of any equipment other than that of the creator of such disturbance.

§4.14.8. Liquid or solid wastes

There shall be no discharge of any liquid or solid wastes into any stream, except as authorized by a public agency.

§4.14.9. Glare and heat

There shall be no direct or reflected glare, whether from floodlights or from high-temperature processes (for example, combustion or welding) so as to be visible from within any residential district. There shall be no discharge of heat or heated air from any source so as to be detectable beyond the lot line.

§4.15. FLOODPLAIN REGULATIONS

§4.15.1. Authority

These regulations are adopted pursuant to the authority granted to localities by Code of Virginia, §15.2 - 2280.

§4.15.2. Purpose

The purpose of these provisions is to prevent: the loss of life and property, the creation of health and safety hazards, the disruption of commerce and governmental services, the extraordinary and unnecessary expenditure of public funds for flood protection and relief, and the impairment of the tax base by:

A. Regulating uses, activities, and development which, alone or in combination with other existing or future uses, activities, and development, will cause unacceptable increases in flood heights, velocities, and frequencies;

B. Restricting or prohibiting certain uses, activities, and development from locating within districts subject to flooding;

C. Requiring all those uses, activities, and developments that do occur in flood-prone districts to be protected and/or floodproofed against flooding and flood damage; and

D. Protecting individuals from buying land and structures that are unsuited for intended purposes because of flood hazards.

§4.15.3. General Provisions

A. Applicability

These regulations shall apply to all privately and publicly owned lands within the city and identified as areas of special flood hazard according to the flood insurance rate map (FIRM) that is provided to the city by the Federal Emergency Management Agency (FEMA)

B. Compliance and liability

1. No land shall hereafter be developed and no structure shall be located, relocated, constructed, reconstructed, enlarged, or structurally altered except in full compliance

with the terms and provisions of these regulations and any other applicable ordinances and regulations, which apply to uses within the city.

2. The degree of flood protection sought by the provisions of these regulations is considered reasonable for regulatory purposes and is based on acceptable engineering methods of study, but does not imply total flood protection. Larger floods may occur on rare occasions. Flood heights may be increased by man-made or natural causes, such as ice jams and bridge openings restricted by debris. These regulations do not imply that districts outside the floodplain district or land uses permitted within such district will be free from flooding or flood damages.

3. These regulations shall not create liability on the part of the city or any officer or employee thereof for any flood damages that result from reliance on these regulations or any administrative decision lawfully made thereunder.

C. Records

Records of actions associated with administering these regulations shall be kept on file and maintained by the floodplain administrator.

D. Abrogation and greater restrictions

These regulations supersede any regulations currently in effect in flood-prone districts. Any existing regulation, however, shall remain in full force and effect to the extent that its provisions are more restrictive than the provisions of these regulations.

§4.15.4. Administration

A. Designation of the floodplain administrator

The zoning administrator shall serve as the floodplain administrator and is hereby appointed to administer and implement the regulations of this section and is referred to herein as the floodplain administrator. The floodplain administrator may:

1. Administer and implement floodplain regulations himself or delegate duties and responsibilities set forth in these regulations to qualified technical personnel, plan examiners, inspectors, and other employees.

2. Enter into a written agreement or written contract with another community or private sector entity to administer specific provisions of these regulations. Administration of any part of these regulations by another entity shall not relieve the city of its responsibilities pursuant to the participation requirements of the National Flood Insurance Program (NFIP) as set forth in the Code of Federal Regulations at 44 CFR 59.22.

B. Duties and responsibilities of the floodplain administrator

The duties and responsibilities of the floodplain administrator shall include but are not limited to:

1. Review applications for floodplain permits to determine whether proposed activities will be located in the special flood hazard area.

2. Interpret floodplain boundaries and provide available base flood elevation and flood hazard information.

3. Review applications to determine whether proposed activities will be reasonably safe from flooding and require new construction and substantial improvements to meet the requirements of these regulations.

4. Review applications to determine whether all necessary permits have been obtained from the federal, state or local agencies from which prior or concurrent approval is required; in particular, permits from state agencies for any construction, reconstruction, repair, or alteration of a dam, reservoir, or waterway obstruction (including bridges, culverts, structures), any alteration of a watercourse, or any change of the course, current, or cross section of a stream or body of water, including any change to the 100-year frequency floodplain of free-flowing nontidal waters of the state.

5. Verify that applicants proposing an alteration of a watercourse have notified adjacent communities, the Department of Conservation and Recreation (DCR) Division of Dam Safety and Floodplain Management, and other appropriate agencies (Virginia Department of Environmental Quality [VADEQ], United States Army Corps of Engineers [USACE]) and have submitted copies of such notifications to FEMA.

6. Approve applications and issue floodplain permits to develop in flood hazard areas if the provisions of these regulations have been met, or disapprove applications if the provisions of these regulations have not been met.

7. Inspect or cause to be inspected, buildings, structures, and other development for which permits have been issued to determine compliance with these regulations or to determine if non-compliance has occurred or violations have been committed.

8. Review elevation certificates and require incomplete or deficient certificates to be corrected.

9. Submit to FEMA, or require applicants to submit to FEMA, data and information necessary to maintain FIRMs, including hydrologic and hydraulic engineering analyses prepared by or for the city, within six months after such data and information becomes available if the analyses indicate changes in base flood elevations.

10. Maintain and permanently keep records that are necessary for the administration of these regulations, including:

    (a) Flood insurance studies, FIRMs (including historic studies and maps and current effective studies and maps) and letters of map change; and

    (b) Documentation supporting issuance and denial of permits, elevation certificates, documentation of the elevation (in relation to the datum on the FIRM) to which structures have been floodproofed, other required design certifications, special exceptions and special use permits, and records of enforcement actions taken to correct violations of these regulation

11. Enforce the provisions of these regulations, investigate violations, issue notices of violations or stop work orders, and require permit holders to take corrective action.

12. Advise the board of zoning appeals, or the city council, as appropriate, regarding the intent of these regulations and, for each application for special exceptions and special use permits, prepare a staff report and recommendation.

13. Administer the requirements related to proposed work on existing buildings:

    (a) Make determinations as to whether buildings and structures that are located in flood hazard areas and that are damaged by any cause have been substantially damaged.

    (b) Make reasonable efforts to notify owners of substantially damaged structures of the need to obtain a permit to repair, rehabilitate, or reconstruct, and prohibit the non-compliant repair of substantially damaged buildings except for temporary emergency protective measures necessary to secure a property or stabilize a building or structure to prevent additional damage.

14. Undertake other actions which may include but are not limited to: issuing press releases, public service announcements, and other public information materials related to permit requests and repair of damaged structures; coordinating with other Federal, State, and local agencies to assist with substantial damage determinations; providing owners of damaged structures information related to the proper repair of damaged structures in special flood hazard areas; and assisting property owners with documentation necessary to file claims for Increased Cost of Compliance coverage under NFIP flood insurance policies.

15. Notify FEMA when the corporate boundaries of the city have been modified and:

    (a) Provide a map that clearly delineates the new corporate boundaries or the new area for which the authority to regulate pursuant to these regulations has either been assumed or relinquished through annexation; and

    (b) If the FIRM for any annexed area includes special flood hazard areas that have flood zones that have regulatory requirements that are not set forth in these regulations, prepare amendments to these regulations to adopt the FIRM and appropriate requirements, and submit the amendments to the city council for adoption; such adoption shall take place at the same time as or prior to the date of annexation and a copy of the amended regulations shall be provided to DCR Division of Dam Safety and Floodplain Management and FEMA.

16. Upon the request of FEMA, complete and submit a report concerning participation in the NFIP which may request information regarding the number of buildings in the special flood hazard area, number of permits issued for development in the special flood hazard area, and number of special exceptions and special use permits issued for development in the special flood hazard area.

17. Take into account flood, mudslide and flood-related erosion hazards, to the extent that they are known, in all official actions relating to land management and use throughout the entire jurisdictional area of the city, whether or not those hazards have been specifically delineated geographically (e.g. via mapping or surveying).

C. Use and interpretation of FIRMs

The floodplain administrator shall make interpretations, where needed, as to the exact location of special flood hazard areas, floodplain boundaries, and floodway boundaries. The following shall apply to the use and interpretation of FIRMs and data:

1. Where field surveyed topography indicates that adjacent ground elevations:

(a) Are below the base flood elevation, even in areas not delineated as a special flood hazard area on a FIRM, the area shall be considered as special flood hazard area and subject to the requirements of these regulations;

(b) Are above the base flood elevation, the area shall be regulated as special flood hazard area unless the applicant obtains a letter of map change that removes the area from the special flood hazard area.

2. In FEMA-identified special flood hazard areas where base flood elevation and floodway data have not been identified and in areas where FEMA has not identified special flood hazard areas, any other flood hazard data available from a federal, state, or other source shall be reviewed and reasonably used.

3. Base flood elevations and designated floodway boundaries on FIRMs and in flood insurance studies shall take precedence over base flood elevations and floodway boundaries by any other sources if such sources show reduced floodway widths and/or lower base flood elevations.

4. Other sources of data shall be reasonably used if such sources show increased base flood elevations and/or larger floodways than are shown on FIRMs and in flood insurance studies.

5. If a Preliminary FIRM and/or a Preliminary Flood Insurance Study has been provided by FEMA:

(a) Upon the issuance of a letter of final determination by FEMA, the preliminary flood hazard data shall be used and shall replace the flood hazard data previously provided from FEMA for the purposes of administering these regulations.

(b) Prior to the issuance of a letter of final determination by FEMA, the use of preliminary flood hazard data shall be deemed the best available data pursuant to §4.15.6.C regarding A Zones, and used where no base flood elevations and/or floodways are provided on the effective FIRM.

(c) Prior to issuance of a letter of final determination by FEMA, the use of preliminary flood hazard data is permitted where the preliminary base flood elevations or floodways exceed the base flood elevations and/or designated floodway widths in existing flood hazard data provided by FEMA. Such preliminary data may be subject to change and/or appeal to FEMA.

D. Jurisdictional boundary changes

1. The city floodplain regulations then in effect on the date of annexation or agreed upon boundary line adjustment shall remain in effect and shall be enforced by the city for all annexed areas until the city adopts and enforces an ordinance which meets the requirements for participation in the NFIP. It is a requirement that municipalities with existing floodplain ordinances shall pass a resolution acknowledging and accepting responsibility for enforcing floodplain ordinance standards prior to annexation of any area containing identified flood hazards. If the FIRM for any annexed area includes special flood hazard areas that have flood zones that have regulatory requirements that are not set forth in these regulations, the city shall prepare amendments to these regulations to adopt the FIRM and appropriate requirements, and submit the amendments to the city council for adoption; such adoption shall take place at the

same time as or prior to the date of annexation and a copy of the amended regulations shall be provided to the DCR Division of Dam Safety and Floodplain Management and FEMA.

2. In accordance with the Code of Federal Regulations, Title 44 Subpart (B) Section 59.22 (a) (9) (v) all NFIP participating communities must notify the Federal Emergency Management Agency and optionally the State Coordinating Office (Virginia Department of Conservation and Recreation – Division of Dam Safety and Floodplain Management) in writing whenever the boundaries of the community have been modified by annexation or the community has otherwise assumed or no longer has authority to adopt and enforce floodplain management regulations for a particular area.

3. In order that all FIRMs accurately represent the city's boundaries, a copy of a map of the city suitable for reproduction, clearly delineating the new corporate limits or new area for which the community has assumed or relinquished floodplain management regulatory authority must be included with the notification.

E. District boundary changes

The city council may modify the boundaries of the floodplain in accordance with the procedures established for zoning map amendments contained in §6.4. Any such modification shall be based upon hydrologic and hydraulic analyses performed by an engineer who shall certify that the technical methods used correctly reflect accepted engineering design methods. Prior to any such modification, approval shall be obtained from FEMA.

F. Interpretation of district boundaries

The zoning administrator shall be responsible for the interpretation of floodplain boundaries and may approve minor refinements after consulting with the city engineer to more accurately determine the true location of such boundaries. Such approval shall be based on hydrologic and hydraulic analyses performed by an engineer, who shall certify that the technical methods used correctly reflect accepted engineering design methods. The determination of the floodplain boundary by the zoning administrator may be appealed by an aggrieved party to the board of zoning appeals pursuant to §6.21.

G. Submitting technical data

The city's base flood elevations may increase or decrease resulting from physical changes affecting flooding conditions. As soon as practicable, but not later than six months after the date such information becomes available, the city shall notify FEMA of the changes by submitting technical or scientific data. Such a submission is necessary so that upon confirmation of those physical changes affecting flooding conditions, risk premium rates and flood plain management requirements will be based upon current data.

H. Letters of map revision

When development in the floodplain causes a change in the base flood elevation, the applicant, including state agencies, must notify FEMA by applying for a conditional letter of map revision prior to construction, and a letter of map revision after construction. For example:

1. Any development that causes a rise in the base flood elevations within the floodway.

2. Any development occurring in Zones A1-30 and AE without a designated floodway, which will cause a rise of more than one foot in the base flood elevation.

§4.15.5. Alteration or relocation of a stream

Alteration or relocation of a stream, including but not limited to installing culverts and bridges. [44 CFR 65.3 and 65.6(a)(12)]

§4.15.6. Establishment of special flood hazard districts

A. Description of special flood hazard districts

The various special flood hazard districts shall include the special flood hazard areas. The basis for the delineation of these districts shall be the flood insurance study and the FIRM for the city prepared by FEMA, dated June 2, 2006, and any subsequent revisions or amendments thereto. The city may identify and regulate local flood hazard or ponding areas that are not delineated on the FIRM. These areas may be delineated on a local flood hazard map using best available topographic data and locally derived information such as flood of record, historic high water marks or approximate study methodologies. The boundaries of the special flood hazard areas are established as shown on the FIRM which is declared to be a part of these regulations and which shall be kept on file at the city.

1. The floodway district is in an AE Zone and is delineated, for purposes of These regulations, using the criterion that certain areas within the floodplain must be capable of carrying the waters of the one percent annual chance flood without increasing the water surface elevation of that flood more than one foot at any point. The following provisions shall apply within the floodway district of an AE Zone [44 CFR 60.3(d)]:

(a) Within any floodway, no encroachments, including fill, new construction, substantial improvements, or other development shall be permitted unless it has been demonstrated through hydrologic and hydraulic analysis performed in accordance with standard engineering practice that the proposed encroachment will not result in any increase in flood levels within the community during the occurrence of the base flood discharge. Hydrologic and hydraulic analyses shall be undertaken only by professional engineers or others of demonstrated qualifications, who shall certify that the technical methods used correctly reflect currently-accepted technical concepts. Studies, analyses, computations, etc., shall be submitted in sufficient detail to allow a thorough review by the floodplain administrator.

(b) Development activities which increase the water surface elevation of the base flood may be allowed, provided that the applicant first applies – with the city's endorsement – for a conditional letter of map revision (CLOMR), and receives the approval of FEMA.

(c) If §4.15.6.A.1(a) is satisfied, all new construction and substantial improvements shall comply with all applicable flood hazard reduction provisions of §4.15.7, §4.15.8, §4.15.9, §4.15.10, and §4.15.11.

B. The AE, or AH Zones on the FIRM accompanying the Flood Insurance Study shall be those areas for which one-percent annual chance flood elevations have been provided and the floodway has not been delineated. The following provisions shall apply within an AE or AH Zone [44 CFR 60.3(c)]:

1. Until a regulatory floodway is designated, no new construction, substantial improvements, or other development (including fill) shall be permitted within the areas of special flood hazard, designated as Zones A1-30 and AE or AH on the FIRM, unless it is demonstrated that the cumulative effect of the proposed development, when combined with all other existing and anticipated development, will not increase the water surface elevation of the base flood more than one foot at any point within the city.

2. Development activities in Zones Al-30 and AE or AH, on the city FIRM which increase the water surface elevation of the base flood by more than one foot may be allowed, provided that the applicant first applies – with the city's endorsement – for a conditional letter of map revision, and receives the approval of FEMA

C. The A Zone on the FIRM accompanying the Flood Insurance Study shall be those areas for which no detailed flood profiles or elevations are provided, but the one percent annual chance floodplain boundary has been approximated. For these areas, the following provisions shall apply [44 CFR 60.3(b)]:

1. The approximated floodplain district shall be that floodplain area for which no detailed flood profiles or elevations are provided, but where a 100-year floodplain boundary has been approximated. Such areas are shown as Zone A on the maps accompanying the Flood Insurance Study. For these areas, the base flood elevations and floodway information from federal, state, and other acceptable sources shall be used, when available. Where the specific one percent annual chance flood elevation cannot be determined for this area using other sources of data, such as the USACE Floodplain Information Reports, U. S. Geological Survey Flood-Prone Quadrangles, etc., then the applicant for the proposed use, development and/or activity shall determine this base flood elevation. For development proposed in the approximate floodplain the applicant must use technical methods that correctly reflect currently accepted non-detailed technical concepts, such as point on boundary, high water marks, or detailed methodologies hydrologic and hydraulic analyses. Studies, analyses, computations, etc., shall be submitted in sufficient detail to allow a thorough review by the floodplain administrator.

2. The floodplain administrator reserves the right to require a hydrologic and hydraulic analysis for any development. When such base flood elevation data is utilized, the lowest floor shall be elevated at least 18 inches above the base flood level.

3. During the permitting process, the floodplain administrator shall obtain:

   (a) The elevation of the lowest floor (including the basement) of all new and substantially improved structures; and,

   (b) If the structure has been floodproofed in accordance with the requirements of this article, the elevation (in relation to mean sea level) to which the structure has been floodproofed.

4. The AO Zone on the FIRM accompanying the Flood Insurance Study shall be those areas of shallow flooding identified as AO on the FIRM. For these areas, the following provisions shall apply [44 CFR 60.3(c).

   (a) All new construction and substantial improvements of residential structures shall have the lowest floor, including basement, elevated above the highest adjacent

grade at least as high as the depth number specified in feet on the FIRM plus 18 inches. If no flood depth number is specified, the lowest floor, including basement, shall be elevated no less than three and one-half feet above the highest adjacent grade.

(b) All new construction and substantial improvements of nonresidential structures shall:

(1) Have the lowest floor, including basement, elevated above the highest adjacent grade at least as high as the depth number specified in feet on the FIRM plus 18 inches. If no flood depth number is specified, the lowest floor, including basement, shall be elevated at least three and one-half feet above the highest adjacent grade; or,

(2) Together with attendant utility and sanitary facilities be completely floodproofed to the specified flood level so that any space below that level is watertight with walls substantially impermeable to the passage of water and with structural components having the capability of resisting hydrostatic and hydrodynamic loads and effects of buoyancy.

(c) Adequate drainage paths around structures on slopes shall be provided to guide floodwaters around and away from proposed structures.

D. Overlay Concept

The floodplain districts described above shall be overlays to the existing underlying districts as shown on the city's zoning map, and as such, the provisions for the floodplain districts shall serve as a supplement to the underlying district provisions.

1. If there is any conflict between the provisions or requirements of the floodplain districts and those of any underlying district, the more restrictive provisions and/or those pertaining to the floodplain districts shall apply.
2. In the event any provision concerning a floodplain district is declared inapplicable as a result of any legislative or administrative actions or judicial decision, the basic underlying provisions shall remain applicable.

§4.15.7. Permit and application requirements

A. Permit requirement

All uses, activities, and development occurring within any floodplain district shall be undertaken only upon the issuance of a zoning permit. Such development shall be undertaken only in strict compliance with the provisions of these regulations and with all other applicable codes and ordinances, as amended, such as the Virginia Uniform Statewide Building Code (USBC) and the city's subdivision ordinance and regulations appertaining thereto. Prior to the issuance of any such permit, the floodplain administrator shall require all applications to include compliance with all applicable state and federal laws and shall review all sites to assure they are reasonably safe from flooding. Under no circumstances shall any use, activity, and/or development adversely affect the capacity of the channels or floodways of any watercourse, drainage ditch, or any other drainage facility or system. A floodplain permit shall be issued by the zoning administrator after an application has been submitted along with any documentation required by the zoning administrator and a fee in accordance with §6.2.4.

B. Site plans and permit applications

All applications for development within any floodplain district and all building permits issued for the floodplain shall incorporate the following information:

1. The elevation of the base flood at the site.
2. The elevation of the lowest floor (including basement).
3. For structures to be floodproofed (nonresidential only), the elevation to which the structure will be floodproofed.
4. Topographic information showing existing and proposed ground elevations.

C. Allowed uses

The following uses shall be permitted within the floodplain by right or with a special use permit, as specified; provided, that such uses are permitted in the zoning district within which they are located, the review criteria contained in §4.15.7 are met, and a floodplain permit is obtained as specified in §4.15.4.C.

1. Permitted uses

(a) Utilities and public facilities and improvements such as streets, channel improvements, bridges, utility pipes, utility transmission lines and stormwater management facilities shall be permitted.

(b) The following uses and improvements shall be permitted, provided that the development or use is otherwise permitted in this chapter and that the area of impervious surface shall not exceed 2,500 square feet and such uses or improvements shall not contain areas of fill in excess of 12 inches in depth:

(1) Agricultural uses such as farming, gardening, grazing and similar uses.

(2) Outdoor recreational uses such as parks, trails, picnic grounds, athletic fields, play grounds, golf courses, tennis courts and archery ranges.

2. Special uses

The following uses and improvements shall be permitted with a special use permit issued by the city council in accordance with the provisions of §6.7, provided that such use is permitted in the zoning district in which the proposed use or improvement is located:

(a) Area specified

The uses permitted and specified in §4.15.7.C.1 where the area of impervious surface will exceed 2,500 square feet or such uses or improvements will contain areas of fill in excess of 12 inches in depth.

(b) Redevelopment of property

(1) For the purposes of §4.15, redevelopment shall be any reconstruction, conversion, structural alteration, relocation or enlargement of any structure or any extension of the use of the land. No redevelopment shall be permitted in any floodplain until the developer submits to the zoning administrator a study performed by an engineer, which addresses the review criteria contained in §4.15.8.

(2) Redevelopment shall only be permitted if construction techniques are employed which floodproof each structure located within the floodplain in accordance with the NFIP, USBC floodproofing standards and all other applicable requirements. Within Zone AO the underside of the lowest floor (including basement) of any structure shall be a minimum of three and one-half feet above the highest adjacent grade. In addition, the underside of the lowest floor (including basement) of any structure shall be a minimum of 18 inches above the floodplain elevation.

§4.15.8. Approval criteria

A. Permitted uses, activities or developments (including redevelopments) within the floodplain shall be permitted only when all available alternative locations not within the floodplain have been properly considered and it is not possible to accommodate reasonable development outside the floodplain boundaries. Each application for a floodplain permit, together with required supporting documentation, shall clearly demonstrate that the proposed use, activity or development:

1. Shall minimize grading to the maximum possible extent.

2. Shall minimize the amount of impervious surface to the maximum possible extent through site design, the use of porous construction materials, grid or modular pavement, and other reasonable methods.

3. Shall minimize the loss of natural vegetation and natural stormwater characteristics.

4. Shall minimize the susceptibility of structures and their contents to flood damage.

5. Shall not negatively affect water quality.

6. Shall not increase the intensity or extent of flooding of lands above or below the property or jeopardize property or human life.

7. Shall not adversely affect the capacity of the floodplain channel or increase erosion within or adjacent to the floodplain. Prior to any proposed alteration or relocation of any channels or of any watercourse, stream, etc., within the city all applicable permits shall be obtained from the USACE, the VADEQ, and the Virginia Marine Resources Commission. Furthermore, notification of the proposal shall be given by the applicant to all affected adjacent jurisdictions, the DCR, and the Federal Insurance Administration.

8. Shall minimize negative impacts upon wildlife habitat.

9. Shall have its design incorporate base (100-year) flood elevation data for any proposed new activity or development greater than 50 lots or five acres, whichever is the lesser, if located within Zone A. In addition, the best available floodway information from federal, state, or other sources acceptable to the zoning administrator shall be used.

10. Shall not result in more than a one-foot increase in the base (100-year) flood elevation. This shall include the cumulative effect of the proposed use, activity, or development when combined with all other existing and anticipated uses, activities, or development.

11. Shall not negatively affect drainage.

§4.15.9. General standards

A. New construction and substantial improvements shall be according to the Virginia USBC, and anchored to prevent flotation, collapse or lateral movement of the structure.

B. New construction and substantial improvements shall be constructed with materials and utility equipment resistant to flood damage.

C. New construction or substantial improvements shall be constructed by methods and practices that minimize flood damage.

D. Electrical, heating, ventilation, plumbing, air conditioning equipment and other service facilities, including duct work, shall be designed and/or located so as to prevent water from entering or accumulating within the components during conditions of flooding.

E. New and replacement water supply systems shall be designed to minimize or eliminate infiltration of floodwaters into the system.

F. New and replacement sanitary sewage systems shall be designed to minimize or eliminate infiltration of floodwaters into the systems and discharges from the systems into floodwaters.

G. On-site waste disposal systems shall be located and constructed to avoid impairment to them or contamination from them during flooding.

§4.15.10. Elevation and construction standards

In all identified flood hazard areas where base flood elevations have been provided in the Flood Insurance Study or generated by a certified professional in accordance with §4.15.6.C, the following provisions shall apply:

A. Residential Construction

New construction or substantial improvement of any residential structure in Zones A1-30, AE, AH and A with detailed base flood elevations shall have the lowest floor, including basement, elevated at least 18 inches above the base flood level.

B. Non-Residential Construction

New construction or substantial improvement of any commercial, industrial, or nonresidential building shall have the lowest floor, including basement, elevated at least 18 inches above the base flood level. Buildings located in all A1-30, AE, and AH Zones may be floodproofed in lieu of being elevated provided that all areas of the building components below the elevation corresponding to the base flood elevation plus one foot are water tight with walls substantially impermeable to the passage of water, and use structural components having the capability of resisting hydrostatic and hydrodynamic loads and the effect of buoyancy. A registered professional engineer or architect shall certify that the standards of this §4.15.10 are satisfied. Such certification, including the specific elevation (in relation to mean sea level) to which such structures are floodproofed, shall be maintained by the zoning administrator).

C. Space Below the Lowest Floor

In Zones A, AE, AH, AO, and A1-A30, fully enclosed areas, of new construction or substantially improved structures, which are below the regulatory flood protection elevation shall:

1. Not be designed or used for human habitation, but shall only be used for parking of vehicles, building access, or limited storage of maintenance equipment used in

connection with the premises. Access to the enclosed area shall be the minimum necessary to allow for parking of vehicles (garage door) or limited storage of maintenance equipment (standard exterior door), or entry to the living area (stairway or elevator).

2. Be constructed entirely of flood resistant materials below the regulatory flood protection elevation;

3. Include measures to automatically equalize hydrostatic flood forces on walls by allowing for the entry and exit of floodwaters. To meet this requirement, the openings must either be certified by a professional engineer or architect or meet the following minimum design criteria:

(a) Provide a minimum of two openings on different sides of each enclosed area subject to flooding.

(b) The total net area of all openings must be at least one square inch for each square foot of enclosed area subject to flooding.

(c) If a building has more than one enclosed area, each area must have openings to allow floodwaters to automatically enter and exit.

(d) The bottom of all required openings shall be no higher than one foot above the adjacent grade.

(e) Openings may be equipped with screens, louvers, or other opening coverings or devices, provided they permit the automatic flow of floodwaters in both directions.

(f) Foundation enclosures made of flexible skirting are not considered enclosures for regulatory purposes, and, therefore, do not require openings. Masonry or wood underpinning, regardless of structural status, is considered an enclosure and requires openings as outlined above.

D. Manufactured homes

All manufactured homes shall be prohibited within the city. No special exceptions or variances will be granted.

E. Recreational vehicles

All recreational vehicles shall be prohibited within any special flood hazard area. No special exceptions or variances will be granted.

§4.15.11. Subdivision standards

A. All subdivisions shall minimize flood damage;

B. All subdivisions proposals shall have public utilities and facilities such as sewer, gas, electrical and water systems located and constructed to minimize flood damage;

C. All subdivisions shall have adequate drainage provided to reduce exposure to flood hazards, and

D. Base flood elevation data shall be obtained from other sources or developed using detailed methodologies, hydraulic and hydrologic analysis, comparable to those contained in a Flood

Insurance Study for subdivision proposals and other proposed development proposals (including subdivisions) that exceed 50 lots or five acres, whichever is the lesser.

§4.15.12. Existing structures in floodplain areas

A structure or use of a structure or premises which lawfully existed before the enactment of these provisions, but which is not in conformity with these provisions, may be continued subject to the following conditions:

A. Existing structures in the floodway shall not be expanded or enlarged unless it has been demonstrated through hydrologic and hydraulic analyses performed in accordance with standard engineering practices that the proposed expansion would not result in any increase in the base flood elevation.

B. Any modification, alteration, repair, reconstruction, or improvement of any kind to a structure and/or use located in any floodplain areas to an extent or amount of less than 50 percent of its market value shall conform to the Virginia USBC and the appropriate provisions of these regulations.

C. The modification, alteration, repair, reconstruction, or improvement of any kind to a structure and/or use, regardless of its location in a floodplain area to an extent or amount of 50 percent or more of its market value shall be undertaken only in full compliance with these regulations and shall require the entire structure to conform to the Virginia USBC.

§4.15.13. Special exceptions

A. The board of zoning appeals may, by special exception, permit within the floodplain additional uses where such uses are not permitted uses specified in §4.15.6, provided that:

1. Such additional use is permitted in the underlying zoning district;

2. Special exceptions shall be granted only in accordance with the procedures and limitations established for special use permits in §6.7; and

3. The special exception granted represents the minimum variation necessary to afford relief.

B. In reviewing a special exception request, the board of zoning appeals shall consider the following additional factors:

1. The danger to life and property due to increased flood heights or velocities caused by encroachments. No special exception shall be granted for any proposed use, development, or activity within any floodway that would cause any increase in the 100-year flood elevation.

2. The compatibility of the proposed use with existing development and nearby development anticipated in the foreseeable future.

3. The relationship of the proposed use to the comprehensive plan and floodplain management program for the area.

4. For historic structures, a determination that the exception is the minimum necessary to preserve the historic character and design of the structure and would not preclude the structures continued designation as a historic structure.

5. The danger that materials may be swept on to other lands or downstream to the injury of others.

6. The proposed water supply and sanitation systems and the ability of these systems to prevent disease, contamination, and unsanitary conditions.
7. The susceptibility of the proposed facility and its contents to flood damage and the effect of such damage on the individual owners.
8. The importance of the services provided by the proposed facility to the community.
9. The requirements of the facility for a waterfront location.
10. The availability of alternative locations not subject to flooding for the proposed use.
11. The safety of access by ordinary and emergency vehicles to the property in time of flood.
12. The expected heights, velocity, duration, rate of rise, and sediment transport of the floodwaters expected at the site.

C. A special exception shall be granted only after the board of zoning appeals has determined that the granting of such would not (i) result in unacceptable or prohibited increases in flood heights, (ii) pose additional threats to public safety, (iii) require extraordinary public expense, (iv) create any nuisances, (v) cause fraud or victimization of the public, and (vi) conflict with local laws or ordinances. Special exceptions shall be granted only after the board of zoning appeals has determined that a special exception would be the minimum required to provide relief from any hardship to the applicant.

D. The board of zoning appeals shall notify, in writing, the applicant for a special exception request that the issuance of a special exception to construct a structure below the 100-year flood elevation (i) increases the risks to life and property and (ii) may result in increased premium rates for flood insurance.

E. A record shall be maintained of the above notification as well as all special exception actions, including justification for the issuance of the special exceptions. The annual or biennial report submitted to the FEMA shall note any special exceptions, which are issued during the period covered by the report.

F. A special exception shall meet the elevation and construction standards established in §4.15.10.

§4.15.14. Variances

A. Applications for a variance, pursuant to the requirements of §6.18, will be subject to the same considerations as a special exception, as set forth in §4.15.13.

B. The board of zoning appeals shall notify, in writing, the applicant for a variance request that the issuance of a variance to construct a structure below the 100-year flood elevation (i) increases the risks to life and property and (ii) may result in increased premium rates for flood insurance.

§4.15.15. Definitions

For the purposes of 4.15, the following words and phrases shall have the meanings respectively ascribed to them by 4.15 unless the context clearly indicates otherwise:

100-YEAR FLOODPLAIN: The Federal Emergency Management Agency designated one percent annual chance water surface elevation. For the purposes of this ordinance, the 100-year flood is the base flood.

A, A1-30, AND AE ZONES: Areas subject to inundation by the 1-percent-annual-chance flood event determined by detailed methods. Base flood elevations are shown. Mandatory flood insurance purchase requirements and floodplain management standards apply.

AH ZONE: Areas subject to inundation by 1-percent-annual-chance shallow flooding (usually areas of ponding) where average depths are between one and three feet. Base flood elevations derived from detailed hydraulic analyses are shown in this zone. Mandatory flood insurance purchase requirements and floodplain management standards apply.

AO ZONE: Areas subject to inundation by 1-percent-annual-chance shallow flooding (usually sheet flow on sloping terrain) where average depths are between one and three feet. Average flood depths derived from detailed hydraulic analyses are shown in this zone. Mandatory flood insurance purchase requirements and floodplain management standards apply. Some AO Zones have been designated in areas with high flood velocities such as alluvial fans and washes. Communities are encouraged to adopt more restrictive requirements for these areas.

APPROXIMATED FLOODPLAIN DISTRICT: The floodplain area for which no detailed flood profiles or elevations are provided, but where a 100-year floodplain boundary has been approximated.

BASE FLOOD: The flood having a one percent chance of being equaled or exceeded in any given year.

BASE FLOOD ELEVATION (BFE): The FEMA designated one percent annual chance water surface elevation and the elevation determined per §4.15.10. The water surface elevation of the base flood in relation to the datum specified on the city's FIRM. For the purposes of these regulations, the base flood is the 100-year flood or 1 percent annual chance flood.

BASEMENT: Any area of the building having its floor sub-grade (below ground level) on all sides.

CONDITIONAL LETTER OF MAP REVISION (CLOMR): A formal review and comment as to whether a proposed flood protection project or other project complies with the minimum NFIP requirements for such projects with respect to delineation of special flood hazard areas. A CLOMR does not revise the effective Flood Insurance Rate Map or Flood Insurance Study.

DCR: Virginia Department of Conservation and Recreation.

DEVELOPMENT: Any man-made change to improved or unimproved real estate, including, but not limited to, buildings or other structures, mining, dredging, filling, grading, paving, excavation or drilling operations or storage of equipment or materials.

ELEVATION CERTIFICATE: An administrative tool of the National Flood Insurance Program which is to be used to provide elevation information necessary to ensure compliance with to community floodplain management ordinances, to determine the proper insurance premium rate, or support a request for a Letter of Map Amendment.

ENCROACHMENT: The advance or infringement of uses, plant growth, fill, excavation, buildings, permanent structures or development into a floodplain, which may impede or alter the flow capacity of a floodplain.

FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA): The federal agency under which the NFIP is administered. In March 2003, FEMA became part of the newly created U.S. Department of Homeland Security.

FLOOD OR FLOODING: A general or temporary condition of partial or complete inundation of normally dry land areas from the overflow of inland or tidal waters; the unusual and rapid accumulation or runoff of surface waters from any source. Mudflows which are proximately caused by such

accumulation or runoff of surface waters and are akin to a river of liquid and flowing mud on the surfaces of normally dry land areas, as when earth is carried by a current of water and deposited along the path of the current. The collapse or subsidence of land along the shore of a lake or other body of water as a result of erosion or undermining caused by waves or currents of water exceeding anticipated cyclical levels or suddenly caused by an unusually high water level in a natural body of water, accompanied by a severe storm, or by an unanticipated force of nature such as flash flood or an abnormal tidal surge, or by some similarly unusual and unforeseeable event which results in the overflow of inland or tidal waters. .

FLOOD INSURANCE RATE MAP (FIRM): an official map of a community, on which FEMA has delineated both the special hazard areas and the risk premium zones applicable to the community. A FIRM that has been made available digitally is called a Digital Flood Insurance Rate Map (DFIRM).

FLOOD INSURANCE STUDY (FIS): A report by FEMA that examines, evaluates and determines flood hazards and, if appropriate, corresponding water surface elevations, or an examination, evaluation and determination of mudflow and/or flood-related erosion hazards.

FLOODPLAIN AREA: Any land area susceptible to being inundated by water from any source.

FLOODPLAIN DISTRICT: District designated as a special flood hazard area.

FLOODPLAIN ADMINISTRATOR: the individual appointed to administer and implement these regulations. The zoning administrator has been appointed as the floodplain administrator.

FLOODPROOFING: any combination of structural and non-structural additions, changes, or adjustments to structures which reduce or eliminate flood damage to real estate or improved real property, water and sanitary facilities, structures and their contents.

FLOODWAY: The channel of a river or other watercourse and the adjacent land areas that must be reserved in order to discharge the base flood without cumulatively increasing the water surface elevation more than one foot.

FLOODWAY DISTRICT: The area within an AE Zone that is delineated, for purposes of this ordinance, using the criterion that certain areas within the floodplain must be capable of carrying the waters of the one percent annual chance flood without increasing the water surface elevation of that flood more than one foot at any point. See §4.15.6.A.

HIGHEST ADJACENT GRADE: the highest natural elevation of the ground surface prior to construction next to the proposed walls of a structure.

HISTORIC STRUCTURE: Any structure that is: (a) listed individually in the National Register of Historic Places (a listing maintained by the Department of Interior) or preliminarily determined by the Secretary of the Interior as meeting the requirements for individual listing on the National Register; (b) certified or preliminarily determined by the Secretary of the Interior as contributing to the historical significance of a registered historic district or a district preliminarily determined by the Secretary to qualify as a registered historic district; (c) individually listed on a state inventory of historic places in states with historic preservation programs which have been approved by the Secretary of the Interior; or, (c) individually listed on a local inventory of historic places in communities with historic preservation programs that have been certified either; (d) by an approved state program as determined by the Secretary of the Interior; or (e) directly by the Secretary of the Interior in states without approved programs.

LETTER OF FINAL DETERMINATION (LFD): A letter FEMA sends to the chief executive officer of a community stating that a new or updated FIRM or DFIRM will become effective in six months.

LETTER OF MAP CHANGE (LOMC): A letter of map change is an official FEMA determination, by letter, that amends or revises an effective Flood Insurance Rate Map or Flood Insurance Study. Letters of map change include:

LETTER OF MAP AMENDMENT (LOMA): An amendment based on technical data showing that a property was incorrectly included in a designated special flood hazard area. A LOMA amends the current effective Flood Insurance Rate Map and establishes that land as defined by meets and bounds or structure is not located in a special flood hazard area.

LETTER OF MAP REVISION (LOMR): A revision based on technical data that may show changes to flood zones, flood elevations, floodplain and floodway delineations, and planimetric features. A letter of map revision based on fill (LOMR-F), is a determination that a structure or parcel of land has been elevated by fill above the base flood elevation and is, therefore, no longer exposed to flooding associated with the base flood. In order to qualify for this determination, the fill must have been permitted and placed in accordance with the community's floodplain management regulations.

LOCAL FLOOD HAZARD MAP – A map created by the city of Fairfax to identify and regulate local flood hazard or ponding areas that are not delineated on the Flood Insurance Rate Map.

LOWEST ADJACENT GRADE: the lowest natural elevation of the ground surface next to the walls of it structure.

LOWEST FLOOR: The lowest floor of the lowest enclosed area (including basement). An unfinished or flood-resistant enclosure, usable solely for parking of vehicles, building access or storage in an area other than a basement area is not considered a building's lowest floor; provided, that such enclosure is not built so as to render the structure in violation of the applicable non-elevation design requirements of 44 CFR 60.3.

MANUFACTURED HOME: A structure, transportable in one or more sections, which is built on a permanent chassis and is designed for use with or without a permanent foundation when connected to the required utilities. For floodplain management purposes the term "manufactured home" also includes park trailers, travel trailers, and other similar vehicles placed on a site for greater than 180 consecutive days, but does not include a recreational vehicle.

NEW CONSTRUCTION: For the purposes of determining insurance rates, structures for which the "start of construction" commenced on or after December 23, 1971, or after December 31, 1974, whichever is later, and includes any subsequent improvements to such structures. For floodplain management purposes, new construction means structures for which the start of construction commenced on or after the effective date of a floodplain management regulation adopted by a community and includes any subsequent improvements to such structures.

POST-FIRM STRUCTURES: A structure for which construction or substantial improvement occurred after December 31, 1974 or on or after December 23, 1971, whichever is later.

PRE-FIRM STRUCTURES: A structure for which construction or substantial improvement occurred on or before December 31, 1974 or before December 23, 1971.

RECREATIONAL VEHICLE: A vehicle which is: (a) built on a single chassis; (b) 400 square feet or less when measured at the largest horizontal projection; (c) designed to be self-propelled or permanently towable by a light duty truck; and (d) designed primarily not for use as a permanent dwelling but as temporary living quarters for recreational camping, travel, or seasonal use.

REGULATORY FLOOD PROTECTION ELEVATION: See "base flood elevation".

SHALLOW FLOODING AREA: A special flood hazard area with base flood depths from one to three feet where a clearly defined channel does not exist, where the path of flooding is unpredictable and indeterminate, and where velocity flow may be evident. Such flooding is characterized by ponding or sheet flow.

SPECIAL FLOOD HAZARD AREA: The land in the floodplain subject to a one percent or greater chance of being flooded in any given year as determined in §4.15.6.

START OF CONSTRUCTION: The date the building permit was issued, provided the actual start of construction, repair, reconstruction, rehabilitation, addition, placement, substantial improvement or other improvement was within 180 days of the permit date. The actual start means either the first placement of permanent construction of a structure on a site, such as the pouring of slab or footings, the installation of piles, the construction of columns, or any work beyond the stage of excavation; or the placement of a manufactured home on a foundation. Permanent construction does not include land preparation, such as clearing, grading and filling; nor does it include the installation of streets and/or walkways; nor does it include excavation for a basement, footings, piers, or foundations or the erection of temporary forms; nor does it include the installation on the property of accessory buildings, such as garages or sheds not occupied as dwelling units or not part of the main structure. For a substantial improvement, the actual start of the construction means the first alteration of any wall, ceiling, floor, or other structural part of a building, whether or not that alteration affects the external dimensions of the building.

STRUCTURE: A walled and roofed building, including a gas or liquid storage tank that is principally above ground, as well as a manufactured home.

SUBSTANTIAL DAMAGE: Damage of any origin sustained by a structure whereby the cost of restoring the structure to its before damaged condition would equal or exceed 50 percent of the market value of the structure before the damage occurred.

SUBSTANTIAL IMPROVEMENT: Any reconstruction, rehabilitation, addition, or other improvement of a structure, the cost of which equals or exceeds 50 percent of the market value of the structure before the start of construction of the improvement. This term includes structures that have incurred substantial damage regardless of the actual repair work performed. The term does not, however, include either: (a) any project for improvement of a structure to correct existing violations of state or local health, sanitary, or safety code specifications which have been identified by the local code enforcement official and which are the minimum necessary to assure safe living conditions, or (b) any alteration of a historic structure, provided that the alteration will not preclude the structure's continued designation as a historic structure. Historic structures undergoing repair or rehabilitation that would constitute a substantial improvement as defined above, must comply with all ordinance requirements that do not preclude the structure's continued designation as a historic structure. Documentation that a specific ordinance requirement will cause removal of the structure from the National Register of Historic Places or the State Inventory of Historic places must be obtained from the Secretary of the Interior or the State Historic Preservation Officer. Any exemption from ordinance requirements will be the minimum necessary to preserve the historic character and design of the structure.

USACE: United States Army Corps of Engineers.

USBC: Virginia Uniform Statewide Building Code.

VADEQ: Virginia Department of Environmental Quality.

VIOLATION: the failure of a structure or other development to be fully compliant with the community's floodplain management regulations. A structure or other development without the elevation certificate, other certifications, or other evidence of compliance required in these regulations is presumed to be in violation until such time as that documentation is provided.

WATERCOURSE: A lake, river, creek, stream, wash, channel or other topographic feature on or over which waters flow at least periodically. Watercourse includes specifically designated areas in which substantial flood damage may occur.

§4.16. STORM DRAINAGE FACILITIES

§4.16.1. Purpose

A. The purpose of §4.16 to define those storm drainage facilities which must be provided by landowners to control rainfall runoff from and across their property in a manner not detrimental to other inhabitants of the city and to preserve, where possible, presently existing natural creek channels. It is the further purpose of §4.16 to minimize the adverse effects of stormwater runoff on downstream drainageways within the city.

B. Article 2.3 (§62.1-44.15:27) of Chapter 3.1 of Title 62.1 of the Code of Virginia establishes the requirement for localities to establish a stormwater management program. §4.16 is adopted pursuant to Chapter 3.1 of Title 62.1 of the Code of Virginia (§62.1-44.15:25 and §62.1-44.15:28 et seq.).

§4.16.2. Performance standards for facilities

Stormwater BMPs, on-site detention facilities, and on-site drainage facilities shall be designed and maintained in such a manner as to minimize economic and environmental costs to the city and its inhabitants in accordance with §4.16.7.

§4.16.3. Performance requirements

Performance requirements for stormwater BMPs, on-site detention facilities, and on-site drainage facilities shall be as specified in §4.16.8.

§4.16.4. Design, construction, inspection and maintenance requirements

Design, construction, inspection and maintenance requirements shall be as defined in the city storm drainage facility specifications as they may be hereafter promulgated by the city engineer and approved by the city council from time to time.

§4.16.5. Usage, improvement and preservation of creeks and channels

A. Natural creeks and drainage channels may be used where available to route stormwater runoff from the city.

B. Natural drainage systems will be improved where necessary in accordance with 9VAC25-870-66 of the Regulations. To the maximum degree possible, these improvements shall be made in such a manner as to preserve, enhance or restore the vegetation, including trees, along the creek line so that the aesthetic, environmental and ecological values of the vegetation are not lost to the community.

C. Land disturbances within resource protection areas or resource management areas may require a water quality impact assessment in accordance with §4.18.8.

Attachment 3.5

City of Fairfax – 2035 Comprehensive Plan

City of Fairfax
2035 Comprehensive Plan

Adopted February 12, 2019
Last Amended June 23, 2020

City of Fairfax, Virginia
10455 Armstrong Street · Fairfax, VA 22030-3630
www.fairfaxva.gov

This is an exciting time for the City's Comprehensive Plan to be significantly revised — not only because it has been 15 years since such an extensive effort has been taken, but also because of the many opportunities happening right now that will impact our future.

Our region is undergoing a major economic shift. Federal spending as a portion of the overall regional economy continues to diminish. This greatly impacts the demand for federal workforce and contractors. Meanwhile, technology-based businesses are flourishing and have made numerous high-profile investments in the region.

The City and George Mason University, at our southern border, have the opportunity to work together to take advantage of this shift and be critical players in the new regional economy. In addition, there are many other opportunities in this plan to leverage the regional economy to benefit the community.

Commercial Redevelopment: Many of the City's commercial properties date to the 1950s and are no longer competitive to attract top-tier tenants. The land use plan provides new flexibility and clarity to encourage property owners to revitalize their properties to meet modern demands and remain competitive in the commercial market.

Housing and Neighborhoods: The City's older housing stock is increasingly being renovated and expanded to keep up with current trends in design and amenities to attract employees in the new economy. The Comprehensive Plan encourages new housing types to attract a wider array of residents and to create and maintain a supply of units that is more affordable.

Historic Resources: The long history of the City provides a unique identity that separates the City from the bulk of Northern Virginia, making it an ideal place to invest. This history will continue to be communicated through preservation of the numerous historic structures and landscapes and celebrated through events and festivals.

Multimodal Transportation: This Comprehensive Plan is supported by the City's recently completed Multimodal Transportation Plan. It envisions a more accessible City for cars, bikes, pedestrians and public transit alike, and accommodates anticipated innovative technologies in transportation. A number of new funding sources also make implementing these initiatives much more feasible than in the past.

Environment: The City will embrace new technologies and promote policies and regulations for a more sustainable future, both locally and globally. New measures will improve the quality of our streams through better stormwater management. The City will vigorously pursue best practices to reduce the volume of waste generated from commercial and residential properties.

Community Services: The City has always prided itself on providing the highest quality public services. Maintaining this stature requires continued investment and monitoring public service facilities for needed improvements, particularly as new technologies and innovations emerge.

The City Council, the Planning Commission, and all of the stakeholders who participated in the development of this plan look forward to seizing the opportunities that will influence the City during the next 15 to 20 years — from an advancing regional economy to new technologies and innovations to support services and environmental sustainability. Together, these opportunities will support a strong, sustainable economy for our vibrant 21st-century community.

Sincerely,

Mayor David L. Meyer

Councilmember Michael Demarco

Councilmember Jennifer Passey

Councilmember So Lim

Councilmember Jonathan Stehle

Councilmember Janice Miller

Councilmember Sang Yi

Contents

The City of Fairfax is committed to the letter and spirit of the Americans with Disabilities Act. If you are in need of assistance in interpreting the Fairfax 2035 Comprehensive Plan or to request a reasonable accommodation for any type of disability, please call 703-385-7930, (TTY 711).

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Chapter 6: Community Services

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Acknowledgments

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David Meyer

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Special thanks to City residents, business owners, and stakeholders who have reviewed and provided comments to City Staff on the 2035 Comprehensive Plan drafts.

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* Term or service ended prior to Planning Commission recommendation or City Council adoption of plan.

1 Introduction

The City of Fairfax ("the City") is unique in boasting the benefits of a closely knit community that is hard to find in the Metropolitan Washington region and the access and proximity to large-city amenities and activities. Residents enjoy neighborhoods with distinct character, an active arts scene, high-quality educational institutions for all ages, easy access to natural amenities, and exceptional City services and facilities. Employees and business owners appreciate its central location within Northern Virginia; ease of access and adjacency to major thoroughfares, and its proximity to major regional employers in the health, education, government, and legal sectors.

Nonetheless, the City is not immune to the internal and external elements that place considerable pressure on its identity and future. Its commercial and retail properties are aging and growing less competitive with nearby jurisdictions, raising questions about future development and tax burdens on City residents. Nearby localities feature newer, more in-demand housing stock to attract and retain residents. Region-wide issues of affordable housing, aging and stressed utility infrastructure, traffic congestion, and environmental concerns similarly impact the City and those who live and work here.

As the City's official policy guide for future development-related decisions, the 2035 Comprehensive Plan ("the Comprehensive Plan") provides direction to enhance the City's function, appearance, and livability based on its current conditions. It also seeks to provide the opportunity to examine the various forces affecting the City – such as redevelopment opportunities, economic competitiveness, and an increasingly strained transportation network – and propose innovative solutions that benefit City residents, workers, and visitors alike. As changes occur in and around the City, the Comprehensive Plan provides a framework for responding to and thriving as a result of these changes. Those who contributed to the Comprehensive Plan hope that readers find it a thoughtfully-crafted document that lends itself to enhancing quality of life and making the City a great place for everyone.

Background

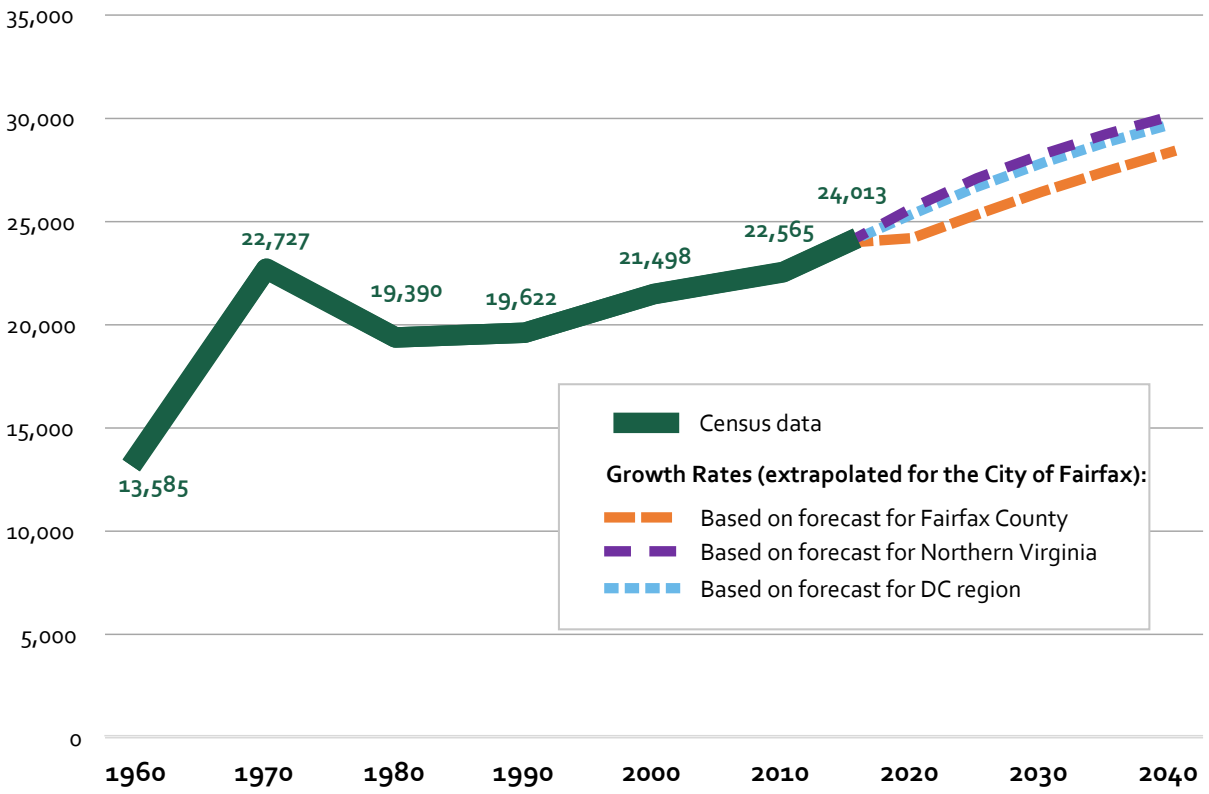
The City was established as the Town of Providence in 1805 following the construction of the Fairfax County Courthouse at the rural crossroads of Little River Turnpike and Ox Road. The Town became a hub of commerce within a predominantly agricultural area removed from the growing City of Washington. In 1874, the Town adopted the name Fairfax.

The Town emerged as a more significant regional crossroads when US 50 and US 29 were created in 1926 as part of the original U.S. Highway System. These roadways supported the City's economic growth as businesses expended around the needs of travelers, and the industries serving the surrounding dairy farms. Federal housing programs following World War II catalyzed suburban development in the City, attracting veterans and their families and spurring rapid population growth. The Town was incorporated as the City of Fairfax in 1961. Further economic growth was fueled by the establishment of George Mason University along the City's southern border in 1964, the opening of Interstate 66 along the northern border in 1982, the extension of the Metrorail Orange Line from Washington to the nearby Vienna/Fairfax-GMU station in 1986, and continued overall growth of the region.

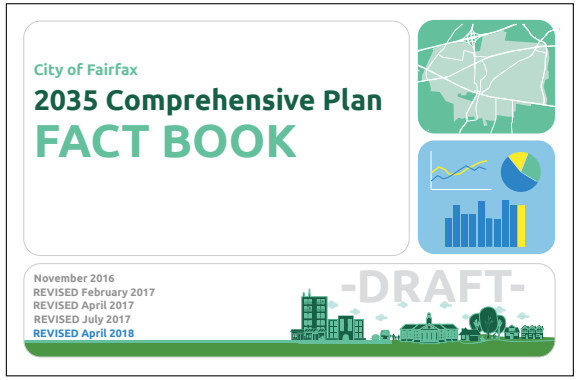
Today, the City is an independent jurisdiction of just over six square miles and a current population of around 24,000, located in the heart of Northern Virginia. The Metropolitan Washington Council of Governments (MWCOG) forecasts an increase of 3,400 households in the City by 2035, as shown in Figure 1. The City strives to strike a balance between maintaining the charm that residents currently enjoy and that makes it unique from surrounding communities while also guiding the growth and development projected for this metropolitan area.

Main Street Fairfax, 1905 *- Winter view of Main Street with the Ratcliffe-Allison House on the right next to Town Hall, built only five years earlier, at the intersection with Mechanic Street (now University Drive).*

FIGURE 1 POPULATION HISTORY AND FORECASTS

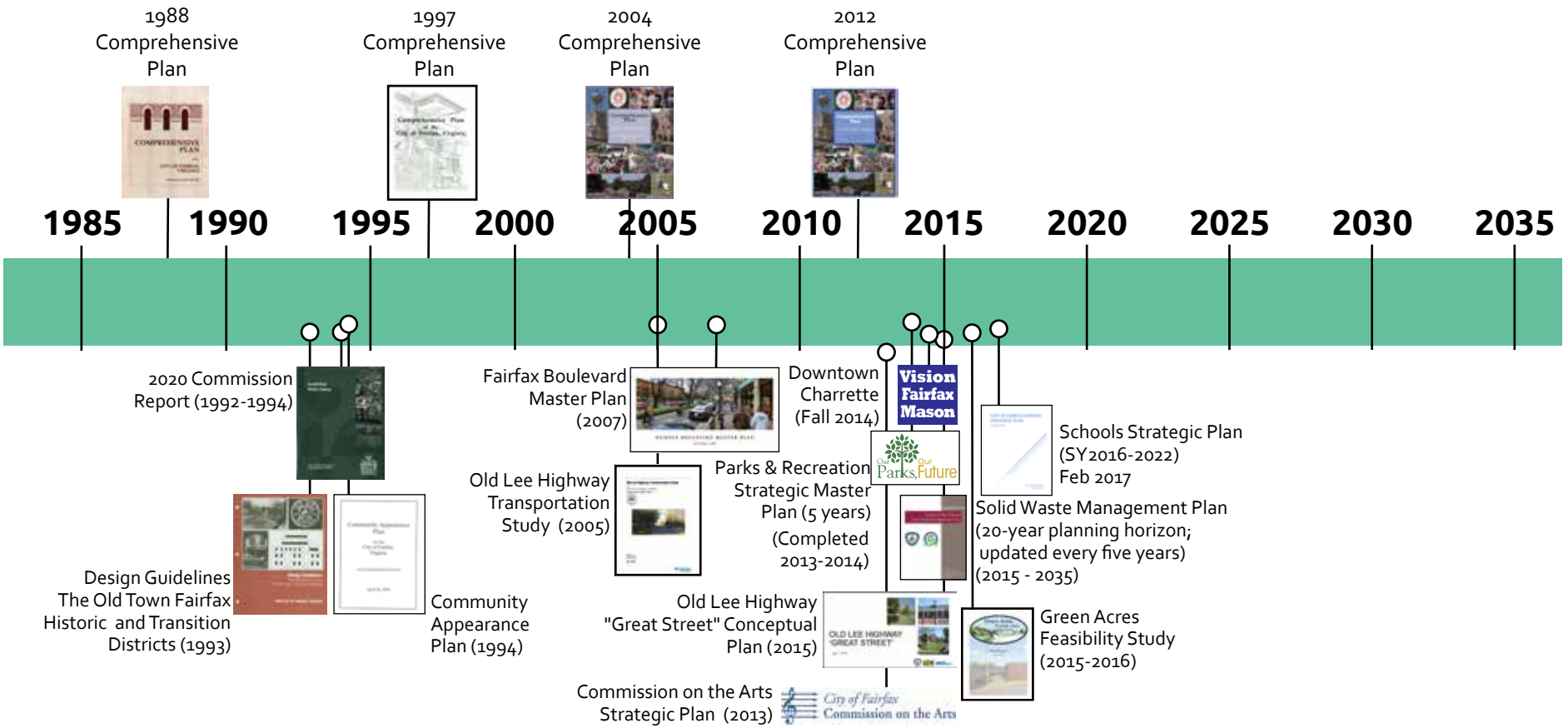


Source: US Census and MWCOG Round 8.4 Cooperative Forecasting: Population and Household Forecasts



For more information about the City's population, check out the City of Fairfax Fact Book.

The first comprehensive development plan for the City was adopted in June 1968, with amendments in 1971 and 1973. New plans were adopted in 1975, 1982, and 1988, with amendments in 1983, 1991, 1993, and 1997. City Council adopted the Comprehensive Plan's last major rewrite in July 2004. During the Comprehensive Plan's 2008-2011 review, the Planning Commission amended the existing plan, which was adopted in 2012. In addition to the Comprehensive Plan updates, many individual studies and plans have been completed over the years as shown in the diagram below. This Comprehensive Plan incorporates and builds on many of the goals and strategies found in those studies as well as other plans and City policies not identified below.



Structure of the Comprehensive Plan

The Comprehensive Plan is a guide for the future growth of the City, focusing on community needs through 2035. Guidance and policy recommendations are provided through a vision, guiding principles, goals, outcomes, and actions, as described below.

- The **Vision** is the aspirational statement for the City in 2035;
- **Guiding Principles** are content-specific statements;
- **Goals** are general statements of the ideals toward which the City strives;
- **Outcomes** define what success looks like for each Goal; and
- **Actions** are the specific steps necessary to realize each Goal and Outcome.

The 14 Guiding Principles, as provided on pages 6-8, are categorized into five chapters: **Land Use, Multimodal Transportation, Environment and Sustainability, Economic Vitality, and Community Services**. Each topic is presented in a chapter of the Comprehensive Plan. Each chapter includes an introduction that provides background on the topic and a description of existing conditions, as well as opportunities and challenges facing the City that inform some of the policies suggested through the Comprehensive Plan. Additional background information, Goals, Outcomes, and Actions are then provided for each Guiding Principle. Goals, Outcomes, and Actions, can also be found in the stand-alone Implementation Guide, which will be revised on a regular basis to track the City's progress on meeting its Goals.

This Comprehensive Plan is supported by two appendices:

- **Appendix A – Chesapeake Bay Preservation Plan** identifies and characterizes the City's water resources and addresses the effects of land use planning and development on water quality in accordance with the Chesapeake Bay Preservation Act.
- **Appendix B - Transportation Practices and Policy** provides additional information on some of the more innovative practices discussed in the Multimodal Transportation Chapter.

Supporting maps, graphs and figures are provided throughout this document.

What is a Comprehensive Plan?

- Document describing a community's vision for how it wants to physically grow and develop in the near future (10 to 20 years)
- Provides guidance on land use, transportation, housing, economic development, environment, public facilities, parks, arts, and historic preservation
- Policy document for decision-making that informs zoning and budget decisions, i.e., the Capital Improvement Program (the five-year plan for physical improvements in the City – facilities, infrastructure, etc.)

VISION

In 2035, the City of Fairfax
has a strong, sustainable economy
that supports a vibrant 21st century community.

GUIDING PRINCIPLES

In 2035, Fairfax is a city with…

Land Use

…a close-knit community and a population that is diverse in its culture, demographics, and lifestyles, that capitalizes on its location in the center of the growing region and with easy access to the nation's capital.

…inviting neighborhoods, each with its own unique character.

Neighborhoods

Housing

…a choice of housing types that meet the needs of our community.

Economic Vitality

…an economy that cultivates and promotes business success and entrepreneurial opportunities for large, small, and independent businesses and capitalizes on national, regional and intellectual partnerships.

Commercial Corridors and Activity Centers

Photo Credit: Hord Coplan Macht

...flourishing centers of commercial and mixed-use activity that include an assortment of grocery stores, restaurants, cafes, entertainment venues, retail stores, offices, and housing.

Cultural Arts

...a thriving cultural arts program that supports a variety of special events, art spaces and performance venues.

Multimodal Transportation

...options for residents to easily, safely, and efficiently move within and between neighborhoods either by walking, bicycling, taking public transportation or driving.

Community Design and Historic Preservation

...architecture that contributes to a vibrant, creative place and complements our historic character.

Parks and Recreation

...inviting, well-maintained parks, trails, open spaces and multi-generational community centers.

Education

...world-class community schools and a best-in-class education from preschool to post-high school that prepares students to be productive, responsible members of society, capable of competing in the global economy and motivated to pursue life-long learning.

Sustainability Initiatives

...sustainable practices that preserve, conserve, reuse and recycle resources.

...a healthy ecosystem of naturally flowing streams, native plants, wildlife, contiguous natural habitat areas, and a healthy tree population.

Natural Environment

Government and Public Safety

...exceptional governmental, police and fire safety services.

Infrastructure and Utilities

...safe, well-maintained infrastructure and use of advanced technology.

Planning Process

Development of the Comprehensive Plan was based on a three-phase process beginning with information collection, followed by analysis and recommendations. Information collection included references to previous plans and studies that helped inform the Comprehensive Plan and input provided by members of the community, including residents, business owners, City Council, City boards and commissions, other stakeholders (George Mason University, Fairfax County, etc.), and City staff. During the information collection period, staff also developed the Fact Book, a summary of data on the City, from physical conditions to demographics and service analysis.

Based on the previous plans and studies referenced, input collected from the community, and data from the Fact Book, a series of goals and outcomes were developed for each of the content areas. These goals and outcomes were reviewed with the Planning Commission and City boards and commissions. The same process was followed to develop actions and metrics for the content areas. Goals, outcomes, actions and metrics for each content area encompass the recommendations of the Comprehensive Plan and provide the foundation for the overall document.

More specific data analysis was provided for the Land Use Strategies Guiding Principle, including a scenario analysis using Envision Tomorrow software. This provided a way to illustrate – with graphics and numbers – what the future could look like, given different development contexts, culminating in a public survey on potential development scenarios based on the results of the analysis. Along with the Scenario Analysis, survey results helped guide development of the Future Land Use Map.

Final revisions to the Comprehensive Plan were based on review by members of the community through public open houses, online forums, and Planning Commission and City Council meetings. The Comprehensive Plan was adopted by City Council on February 12, 2019 (R-19-03) after recommendation by the Planning Commission (PC-19-02).

The Multimodal Transportation Plan was prepared through a separate planning process parallel to this one, but with the intention of incorporating it into the Comprehensive Plan, with connections to land use, open space, housing, and economic development.

Community Outreach

Community outreach played a vital role in the development of the Comprehensive Plan. Early public involvement guided all aspects of the Comprehensive Plan including issue and opportunity identification, as well as development of the vision, goals, and objectives. Providing the opportunity for public input encourages citizens to be invested in the future of their community and helps ensure that recommendations developed as part of the Comprehensive Plan are implemented and sustained over time.

Staff employed a diverse set of traditional and non-traditional outreach tools and strategies to ensure all stakeholders had an opportunity to contribute throughout the process.

Community Surveys

The Center for Social Science Research (CSSR) at George Mason University worked with City staff to develop and administer a Community Survey to ask members of the community for feedback on issues of interest to formulate a vision, goals, and objectives for the Comprehensive Plan.

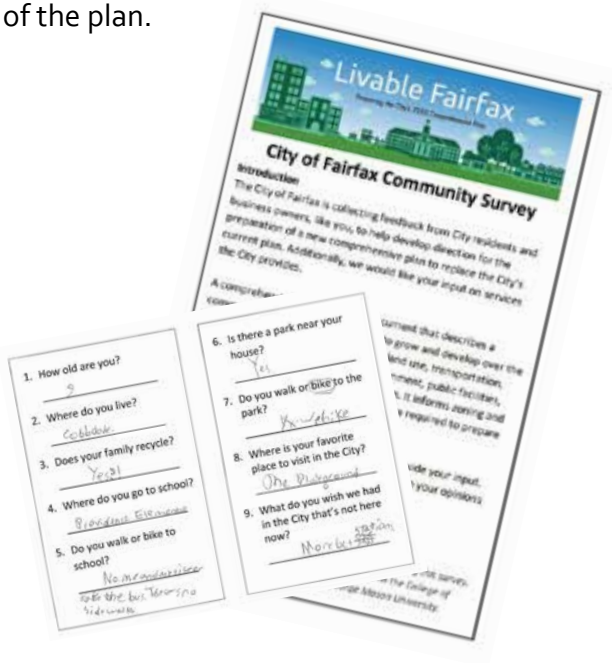
City residents and business owners were notified of the survey via postcards sent out in March 2016, which provided directions on how to take an online survey. Paper copies were also made available to those that requested them.

An overview of the results was presented at a public meeting on June 6 at the Sherwood Community Center, as well as at meetings of the City Council on June 14 and the Planning Commission on June 27, which were televised on Cityscreen-12. The full document detailing the process and analyzing the results was released on June 30, 2016.

CSSR sent out 9,943 postcards to City residences and businesses, and followed up with reminder calls. A total of 863 surveys were completed.

City staff also prepared a ten-question Kids' Survey that was distributed at Parks and Recreation events and to students at Daniels Run Elementary School, Providence Elementary School, Lanier Middle School, and Saint Leo the Great Catholic School. A total of 620 Kids' Surveys were completed. The ages of the students that completed the survey ranged from seven to thirteen.

Online Google surveys were also used to collect feedback on proposed future development scenarios, the future land use map, and drafts of the plan.



Website and Social Media

Information about the Comprehensive Plan process, meetings, technical information, and opportunities to provide feedback were made available on the City's website. City staff created a page within the website devoted to the Comprehensive Plan, www.fairfaxva.gov/livablefairfax.

In addition to the website, City staff promoted meetings and information about the Comprehensive Plan through Facebook and Twitter. One of the many benefits of using social media for outreach is that it allowed staff to track how many people viewed what was shared and which posts performed the best.

Several of the presentations were shared live on Facebook and posted on the City's YouTube channel. Staff also created YouTube videos to advertise the community survey, which were shown on the City's government access television station, Cityscreen-12. Staff also created a welcome video for an open house to explain the comprehensive plan process.

Printed Media

To ensure all members of the community were aware of the comprehensive plan process and opportunities to participate, articles were regularly included in the CityScene, the City's newsletter published monthly and mailed to all City businesses and residents. Seventeen articles related to the Comprehensive Plan have been posted in the CityScene since April 2016.

To reach an even broader audience for targeted events, ads were purchased in regional newspapers, The Fairfax Times and Fairfax Connection.

Other printed communications include postcards mailed to all residents and businesses and informational fliers handed out at City events and displayed at City facilities.

CityScene Article

City Seeks Input on Vision for 2035 *Comprehensive Plan*

The City of Fairfax seeks community feedback on the draft vision statement for the *2035 Comprehensive Plan*, culminating with a public comment period during the September 26 Planning Commission meeting. The *Comprehensive Plan* vision statement will provide guidance on how the city should grow and develop during the next 20 years. Information: 703-385-7930.

The draft vision statement is a series of statements related to each of the proposed content areas in the *2035 Comprehensive Plan*: Land Use; Neighborhoods; Commercial Centers and Redevelopment Areas; Housing; Community Design and Historic Preservation; Transportation, Mobility and Connectivity; Natural Environment; Sustainability Initiatives; Business Attraction, Retention and Promotion; Education; Parks, Recreation and Cultural Arts; Public Safety; Infrastructure and Utilities; and Implementation Strategy and Performance Metrics.

The vision statement is intended to describe Fairfax's values, aspirations and shared image of what the community as a whole

continued on page 8

Public Meetings

The Planning Commission began discussions on preparing the Comprehensive Plan on Monday, October 26, 2015. Members of the public were encouraged to attend any of the regularly scheduled Planning Commission meetings to share thoughts or concerns about the Comprehensive Plan, even if it was not explicitly being discussed as part of the agenda.

In addition to presentations to the Planning Commission, staff presented briefings and solicited feedback at the regular meetings of other boards and commissions including the City of Fairfax School Board, Board of Architectural Review, Community Appearance Committee, Commission on the Arts, Fairfax Renaissance Housing Corporation, Parks and Recreation Advisory Board, Historic Fairfax City Inc., Economic Development Authority, Commission for Women, and the Environmental Sustainability Committee. The Planning Commission also hosted joint work sessions at The Civil War Interpretive Center at Historic Blenheim with the various boards and commissions to discuss specific topics of interest, and joint work sessions with the City Council.

Community Events

Open Houses

In addition to regularly scheduled public meetings, staff hosted many open houses at locations throughout the City, including the Stacy C. Sherwood Community Center, Old Town Hall, Lanier Middle School, and City Hall.

Panel Discussion: Emerging Trends Shaping our Community

The City gathered a panel of experts and a moderator to talk about trends in housing, economic vitality, and community development as part of the effort to prepare the Comprehensive Plan. The discussion took place on Saturday, September 16, 2017 at the Sherwood Community Center.

The expert panel included Thomas Maskey, Jr., Principal of Potomac Development Group, who has dedicated 35 years to the development of retail shopping centers and is responsible for over 8 million square feet of development in the Washington, D.C. region, including landmark projects at Downtown Silver Spring, Washingtonian Center, Milestone Center, Fair Lakes Center, Fairfax Corner, Virginia Gateway, and National Harbor; Donald W. Knutson, President of the Knutson Companies, whose development projects include Downtown Brambleton and Crescent Place in Leesburg; and Michelle Krocker, Executive Director of the Northern Virginia Affordable Housing Alliance. The discussion was moderated by Lisa Nisenson, an affiliated researcher with George Mason University's Center for Real Estate Entrepreneurship who leads Alta Planning + Design's New Mobility Group.

City Events

City staff attended other events to engage and inform the public about the comprehensive planning process. Those events included:

- Chocolate Lovers Festival
- Scavenger Hunt on July 4
- Fall Festival
- Easter Egg Hunt
- Community Farmers Market
- Rock the Block
- Bike to Work Day

Schools

Staff worked with the City of Fairfax School Board, Superintendent, and School principals to involve the City's students in the comprehensive planning process early and often. In addition to the Kids' Survey that was covered previously, staff made several presentations and had discussions with the students at Daniels Run Elementary School, Providence Elementary School, Lanier Middle School, Fairfax High School, and George Mason University. At the end of the 2017-2018 school year, representatives from the City's schools and from George Mason University presented their thoughts on the draft goals to the Planning Commission at public meetings. All City school students grades K through 12 were also encouraged to share their vision of Fairfax in 2035 through an art contest.

Statutory Requirements

The comprehensive plan serves as a locality's primary decision-making document for land use and development. It establishes the intent and goals of the community to influence development in both the private and public sectors and should be relied upon as an initial source that directs users to appropriate reports or strategic plans where necessary.

State law governing the development of a comprehensive plan (Section 15.2-2223 of the Code of Virginia) requires every county, city, and town to adopt a plan for the physical development of the territory within its jurisdiction. The Code further requires that comprehensive plans be reviewed every five years to ensure that the plan is responsive to current circumstances and that its goals continue to be supported by the citizenry; however, the City should consistently be prepared to make interim changes to the plan because necessary changes can result from the completion of strategic plans or changes to other City policies. The Planning Commission is tasked with preparing the plan and recommending it to the City Council for adoption.

The Code of Virginia includes both required and optional content for comprehensive plans. Required provisions relate to issues that are fundamental to the plan itself, such as long-range recommendations for development and methods of implementation. In order to address what are perceived as critical issues statewide, the Code of Virginia specifically requires that all comprehensive plans address both affordable housing and transportation infrastructure.

Authority

While the Comprehensive Plan communicates a vision for future land use and development in the City, the zoning ordinance provides the regulatory mechanism to ensure that new development and changes in land uses are consistent with this vision. Section 15.2-2232 of the Virginia Code states that a comprehensive plan "shall control the general or approximate location, character and extent of each feature shown on the plan." Consistency with the Comprehensive Plan is one of the approval considerations for zoning text amendments, zoning map amendments, special use permits, and special exceptions to the zoning ordinance.

Where any new development is proposed that requires a land use action not consistent with the Comprehensive Plan, the applicant should request a modification to the Comprehensive Plan as well, in order to keep the two documents consistent. Such modifications must be reviewed by the Planning Commission and approved by City Council. This provides flexibility for the Comprehensive Plan to adjust to market conditions and design trends, but ensures that any such changes are reviewed and considered within the greater context of the City's vision.

In addition to guiding decisions on land use and development, the Comprehensive Plan includes guidance on investment for transportation and infrastructure. Section 15.2-2232 of the Code of Virginia requires that no public facilities – such as streets, parks, utilities, or public buildings – shall be approved or constructed unless deemed to be in accordance with the Comprehensive Plan by the Planning Commission. The Comprehensive Plan should be used as a reference for all land use and budget decisions. Any budget item in the Capital Improvement Plan should support at least one of the goals of the Comprehensive Plan.

Implementation

In addition to providing guidance on land use and budget decisions, the Comprehensive Plan includes numerous actions to be taken by the City or its affiliates in order to achieve the vision of the plan. A separate Implementation Guide has been developed in support of the Comprehensive Plan to track progress on implementation of these actions. This is accomplished through an implementation matrix that provides the lead responsibility, timeframe for initiation and timeframe for completion of each action. Where appropriate, performance metrics are listed for goals to provide a mechanism for determining whether the implemented actions are achieving the desired result.

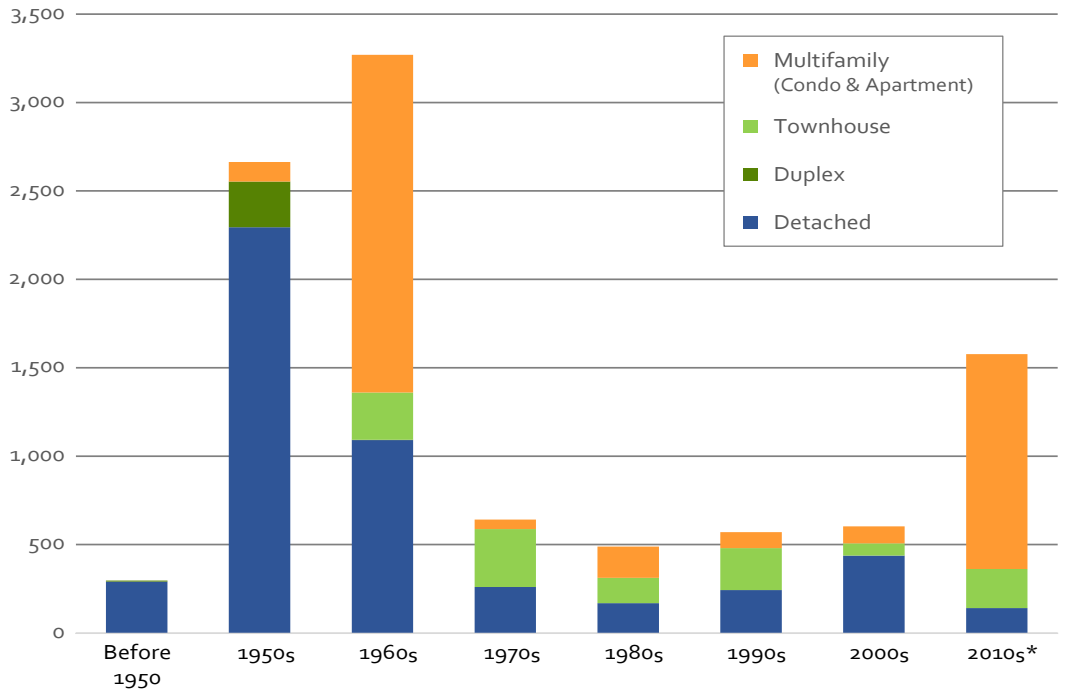
The Implementation Guide is a separate document from the Comprehensive Plan because it is expected to be updated regularly as progress is made toward achieving each action. The lead responsibilities, timeframes and performance metrics are also subject to change as more information is obtained in support of specific actions.

2 Land Use

The City's residential neighborhoods are distinct in housing types, age, and character. While much of the land area of the City is encompassed by single-family neighborhoods initially developed in the 1950s and 1960s, there is also a significant amount of multifamily neighborhoods built primarily during the 1960s. Since then, the City has continued to accommodate residential development on smaller sites, including single-family homes, townhomes, and multifamily residences.

As developable land has become scarcer, new residential development has been more dependent on infill and redevelopment sites. Developers are offering higher-end products and seeking greater densities to offset the higher land values and development costs associated with redevelopment sites. In addition, some homes in existing single-family neighborhoods are being significantly renovated, expanded, or redeveloped.

FIGURE 2 HOUSING UNITS BY TYPE AND DECADE BUILT



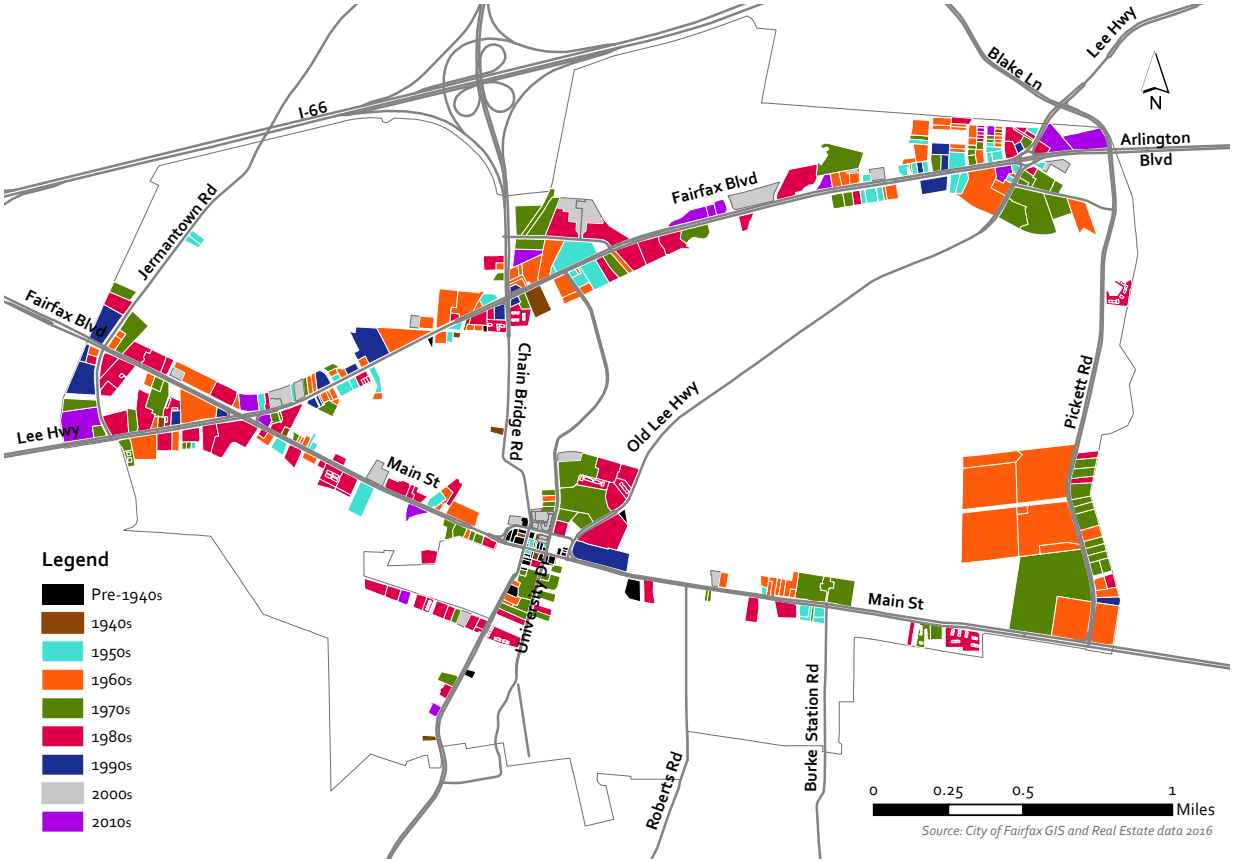
Note: Includes housing units existing and approved as of January, 2018. "2010s" includes housing units under construction, as well as projects that have been approved by City Council, but for which construction has not begun.

Source: Fairfax City Real Estate Assessments

Commercial uses in the City have historically benefited from its location at a crossroads of several regional transportation routes. While most neighborhoods in the City were established in the 1950s and 1960s, heavy commercial growth continued through the 1980s. This was fueled by continuing regional population growth and by general market trends that supported extensive office and retail growth. There has been less commercial growth in recent years as the commercial real estate market has changed and new development in surrounding areas of Fairfax County has added competition to the local market. Despite this, the City has experienced some redevelopment of older commercial properties, and recently approved mixed-use projects indicate that unsubsidized redevelopment remains feasible.

The Land Use Chapter encompasses the following Guiding Principles: Land Use Strategies, Neighborhoods, Commercial Corridors and Activity Centers, Housing, and Community Design and Historic Preservation.

FIGURE 3 COMMERCIAL AND INDUSTRIAL BUILDING AGE BY DECADE BUILT

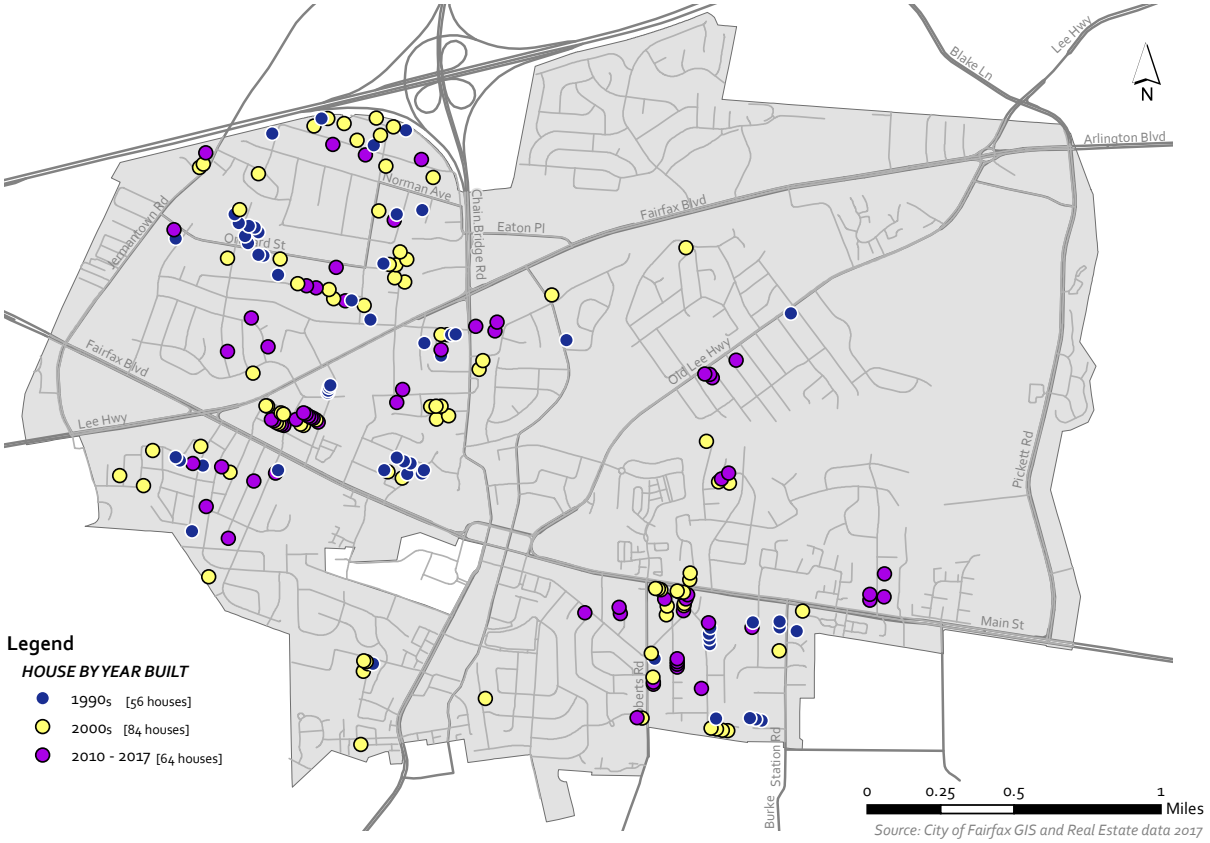


Opportunities and Challenges

Residential improvements

With an aging housing stock, there is consistent pressure for upgrading or replacing existing homes. While this can help keep neighborhoods current with consumer desires and housing preferences, it can also impact the character of existing neighborhoods.

FIGURE 4 INFILL HOUSING BY DECADE BUILT

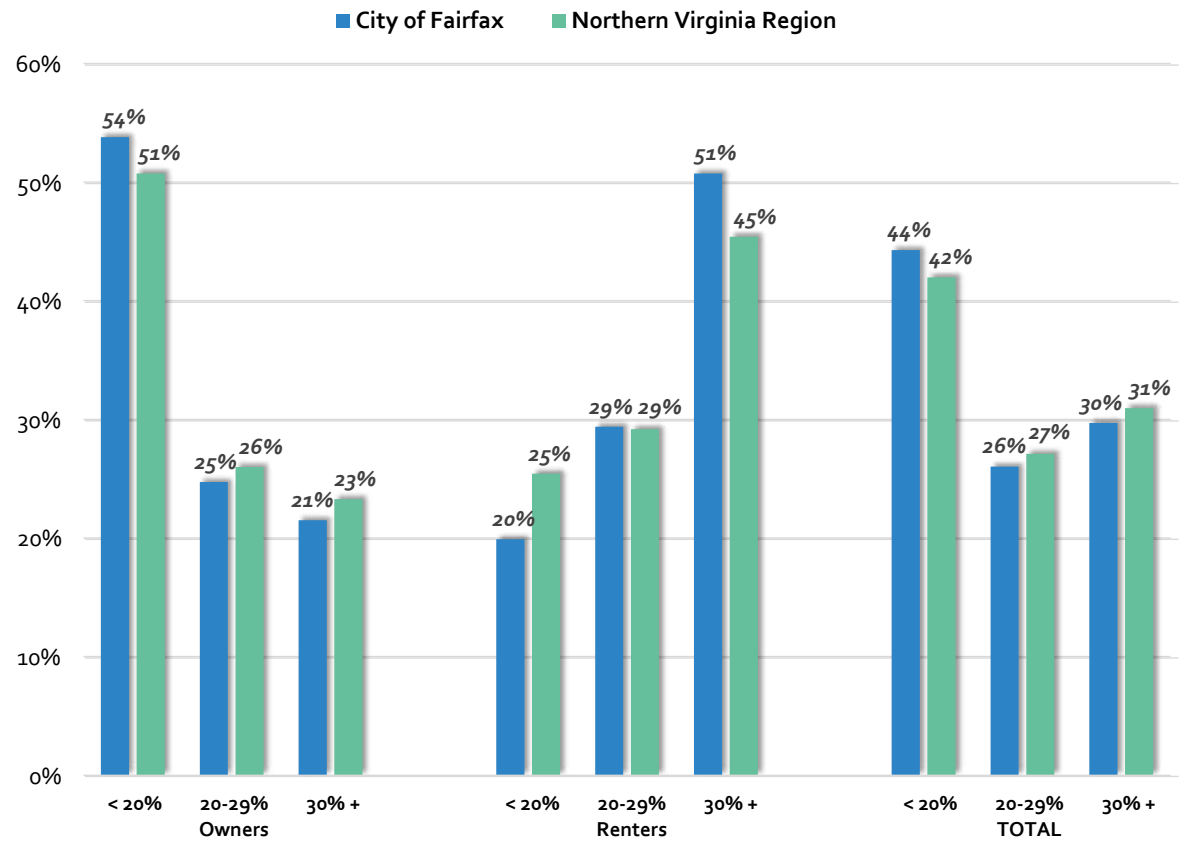


Housing affordability

As the regional economy has grown, increases in housing values have outpaced increases in income. As a result, there are few residential units in the City that are affordable to lower income households. About one-third of City households spend more than 30% of their income on housing costs, as shown in Figure 5 , which also highlights that almost half of renters reside in units that are potentially cost-burdensome.

While many of the apartments that were built in the 1960s are more affordable than newer apartments in the surrounding areas of Fairfax County, their asking rents are not achievable to a full range of incomes. There is also no guarantee that these apartment complexes will remain as "naturally occurring affordable housing." Redevelopments of two complexes have been approved since 2013, and there has been communicated interest in redevelopment of additional complexes.

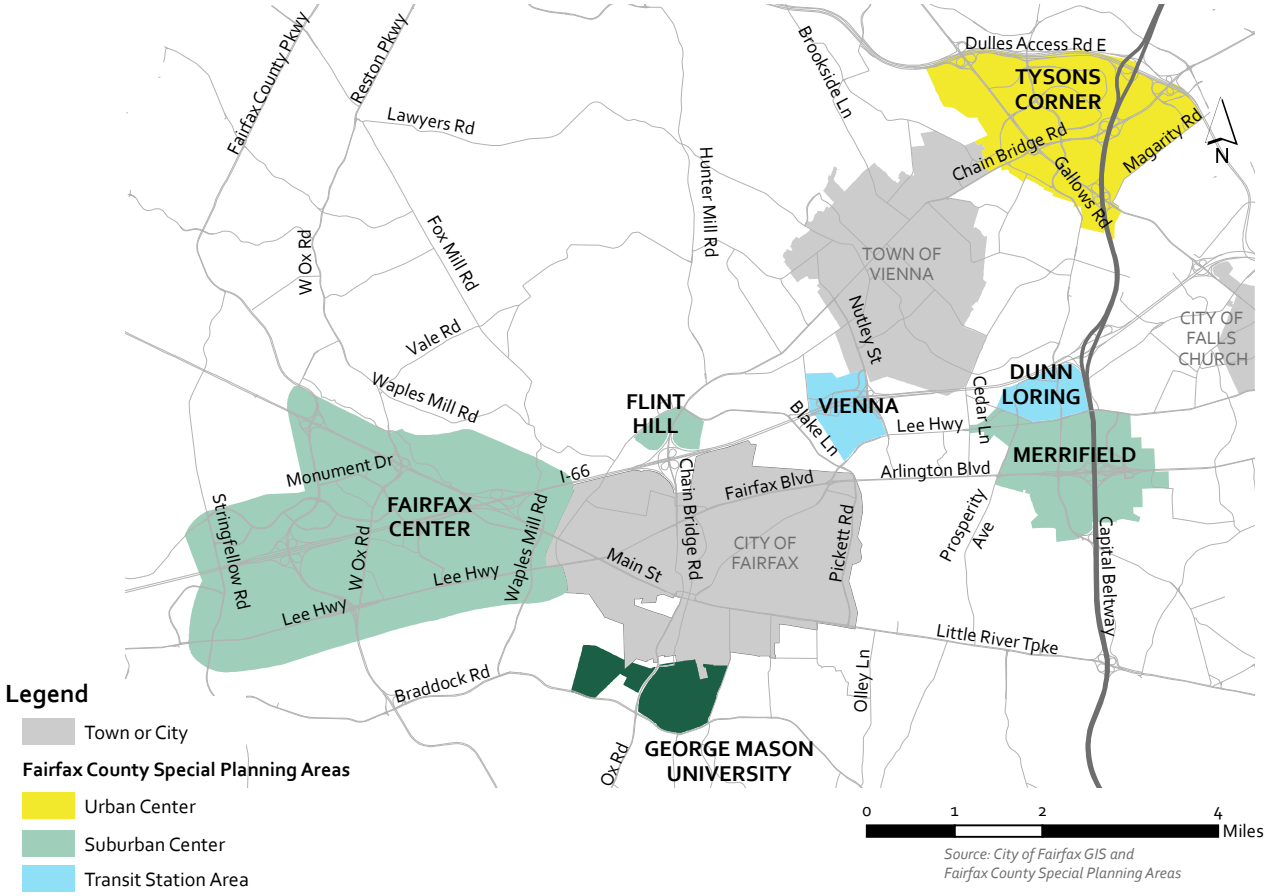
FIGURE 5 HOUSING COSTS AS A PERCENTAGE OF HOUSEHOLD INCOME BY TENURE AND IN TOTAL



Source: US Census ACS, 2012-16

Note: The Department of Housing and Urban Development defines cost-burdened families as those who pay more than 30% of their income for housing and may have difficulty affording necessities such as food, clothing, transportation, and medical care.

FIGURE 6 NEARBY MAJOR MIXED-USE CENTERS

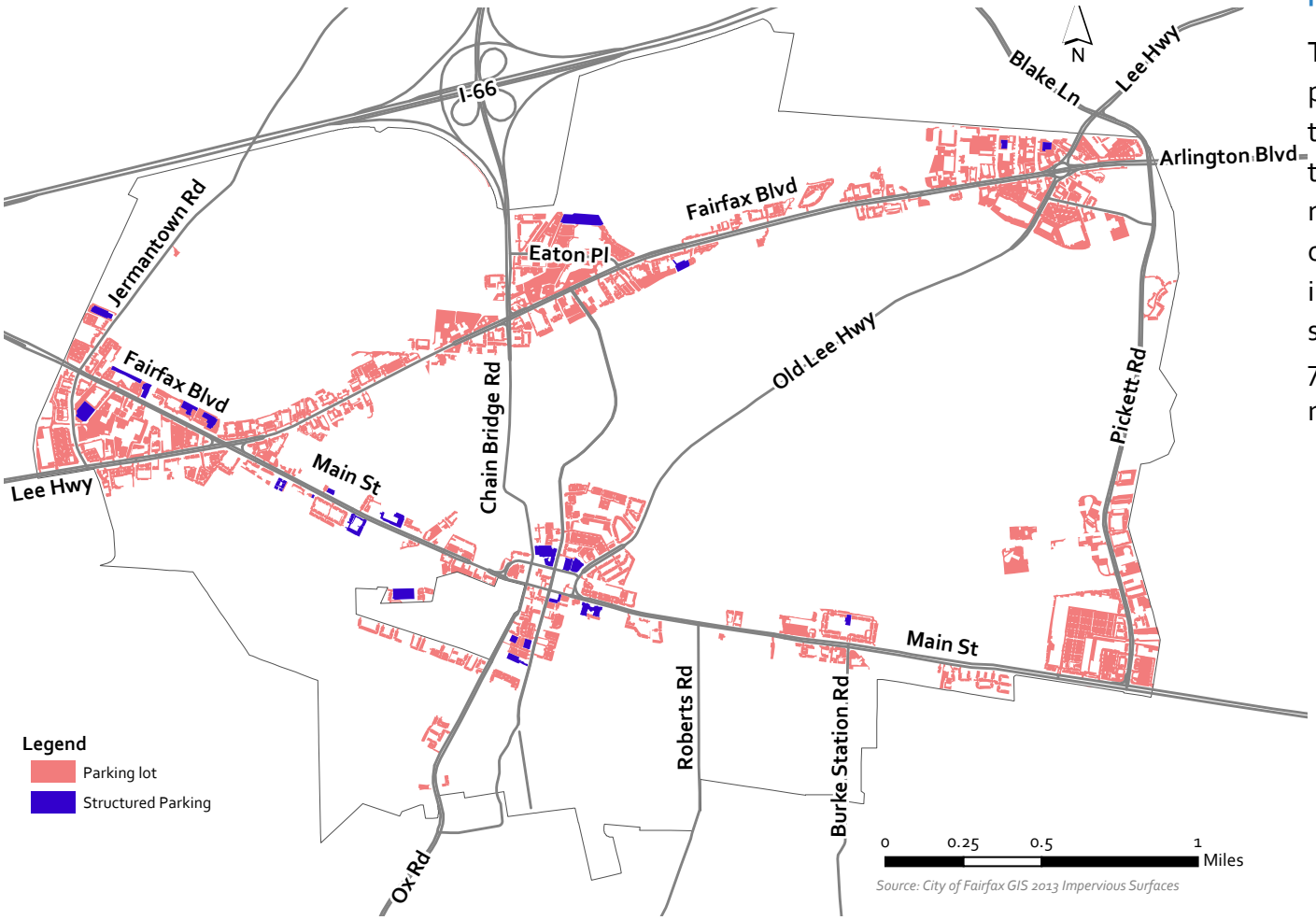


Source: City of Fairfax GIS and Fairfax County Special Planning Areas

Commercial market changes

Long-term shifts in retail and office markets have added uncertainty to the continued marketability of some commercial properties in the City. In addition, new development to the east and west of the City absorbs potential demand for destination commercial offerings, and the City's Commercial Corridors and Activity Centers currently lack many popular types of retail and entertainment establishments. This trend could continue with the Fairfax County Comprehensive Plan encouraging new commercial and mixed-use development in designated Special Planning Areas proximate to the City, as shown in Figure 6.

FIGURE 7 COMMERCIAL AND INDUSTRIAL SURFACE AND STRUCTURED PARKING



Commercial redevelopment potential

There are numerous commercial properties throughout the City with the potential for redevelopment or to reposition themselves for current market demands. Characteristics of potential redevelopment sites include significant amounts of surface parking, as shown in Figure 7, and low building-to-land value ratios.

Land Use Strategies

Guiding Principle:

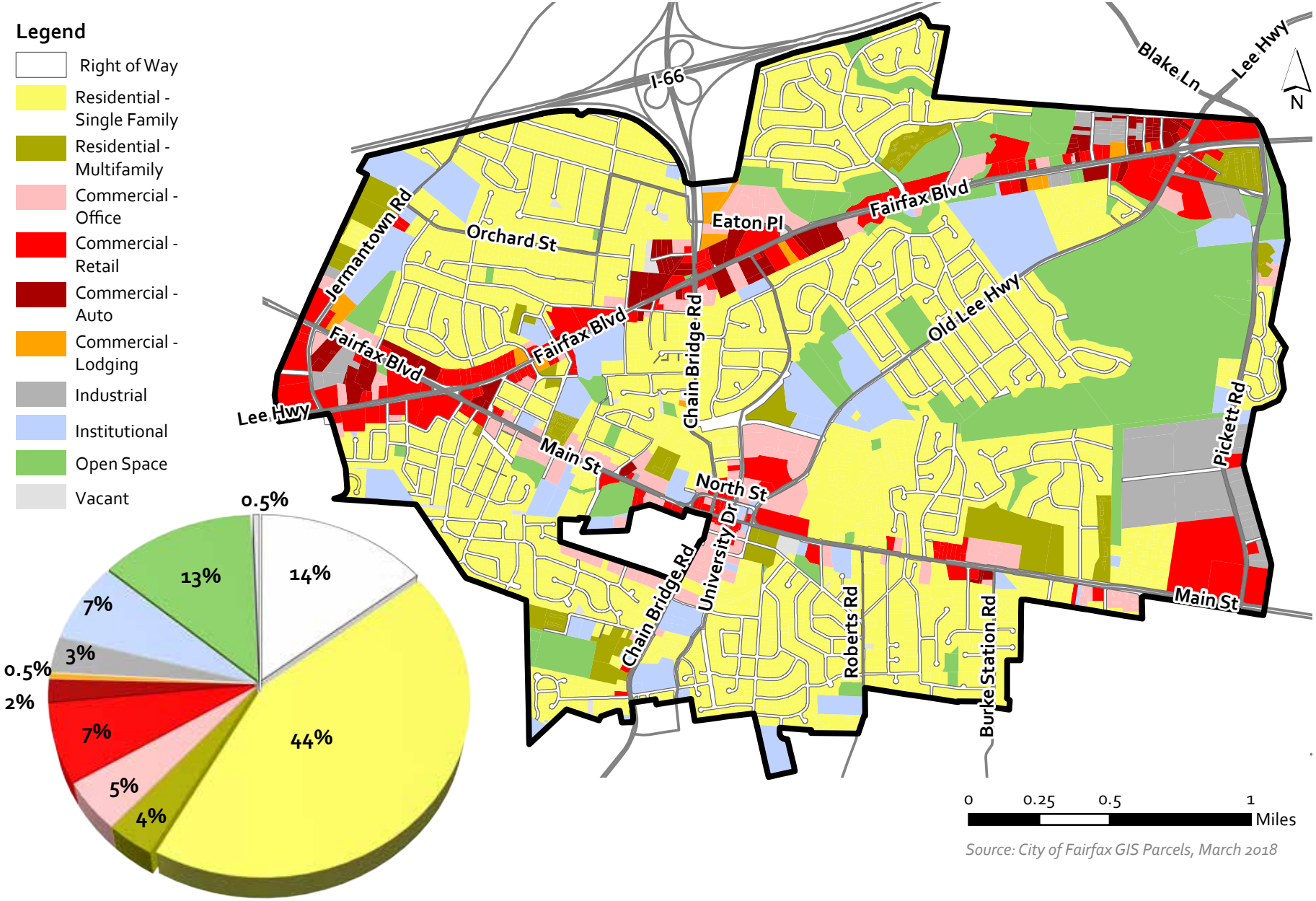
In 2035, Fairfax is a city with…
a close-knit community and a population that is diverse in its culture, demographics, and lifestyles, that capitalizes on its location in the center of the growing region and with easy access to the nation's capital.

More than 200 years of growth and development have formed Fairfax into a unique small city with development patterns and building styles that span multiple eras. A variety of land uses are distributed throughout the City to complement and support each other. Existing land uses and a summary of land use coverage areas in the City are shown in Figure 8. The City, however, continues to evolve to accommodate changing needs of residents and businesses. The Land Use Strategies Guiding Principle supports measures to manage growth in such a way to allow the City to evolve while maintaining the unique character that has taken decades to build.

Managing development depends heavily on the Comprehensive Plan Future Land Use Map (shown on p. 27). This map, which is supported by Goal 1 of this Guiding Principle, illustrates the desired land uses in the City organized by Place Types, which are locations within the City that are intended to share similar physical characteristics and have both zoning and "Link + Place" street types (as defined under Multimodal Transportation Goal 2) that are consistent with these characteristics.

Rather than show land uses as they exist today, the Future Land Use Map shows how the Comprehensive Plan foresees appropriate development over the next 15 to 20 years. The Place Types shown on the map communicate the types of uses and character of development envisioned throughout the City.

FIGURE 8 EXISTING LAND USE MAP



Source: City of Fairfax GIS Parcels, March 2018

Land Use Strategies

Goal 1

Ensure development is complementary.

OUTCOME LU1.1:	The Future Land Use Map is used in conjunction with other recommendations from the Comprehensive Plan to guide development throughout the City.
ACTION LU1.1.1	Maintain and update, as necessary, a Future Land Use Map that provides for a balanced mix of development types and addresses current and future needs of the City.
ACTION LU1.1.2	Use the Future Land Use Map (Figure 9), Place Types, and general text from the Comprehensive Plan as a guide when considering new development throughout the City.
ACTION LU1.1.3	Refer to Parcel Specific Recommendation, as detailed on pages 39-44 for potential alternative uses. Amend the Comprehensive Plan to provide additional Parcel Specific Recommendations as appropriate.
OUTCOME LU1.2:	Zoning regulations that accommodate high-quality design and development practices.
ACTION LU1.2.1	Consistently review the Zoning and Subdivision Ordinances and the Zoning Map to ensure they are able to support the Future Land Use Map and other guidance of the Comprehensive Plan.

While the 6.3 square mile City is primarily built out, leaving few opportunities for large new development, there is consistent pressure for the City's variety of land use types to adapt to environmental, economic and cultural demands. This means that some flexibility must be provided with a balanced mix of development types that accommodate adaptations without negatively impacting the existing community. New development and redevelopment should be complementary to surrounding areas and contribute to an attractive, accessible, and economically viable place.

This can be managed by using the Future Land Use Map in conjunction with recommendations of this Comprehensive Plan and the requirements of the Zoning and Subdivision Ordinances to guide development within the City. While the Future Land Use Map communicates the most appropriate types of uses and character of development, the Zoning and Subdivision Ordinances provide the regulatory measures to accommodate such development. The Ordinances may occasionally be amended to furnish necessary changes for various land uses.

Future Land Use Map

The Future Land Use Map is provided in Figure 9, with specific guidance on development for each of the Place Types identified on the map provided on the following pages. Additional guidance is provided for certain specific sites beginning on page 38. When using the Future Land Use Map, consideration should also be given to the other Guiding Principles of this chapter, depending on site location and types of uses.

The following information is provided for each of the Place Types:

1. Definition: A brief description of the types of uses and structures the Place Type applies to.
2. Zoning Districts: A list of Zoning Districts that are most likely to accommodate the uses and structures provided in the definition for the Place Types.
3. Link + Place Street Types: A list of the types of streets (as provided in the Multimodal Transportation Chapter) where the Place Type is most appropriate.
4. Physical Characteristics: A description of general preferences for site design and building placement.
5. Concept diagrams and photos: Provided to show typical development patterns for each Place Type.

Most new development is anticipated to occur in areas designated as an Activity Center Place Type. There are five areas of the City that have this Place Type designation: Old Town Fairfax, Northfax, Kamp Washington, Fairfax Circle, and Pickett & Main. The following additional guidance is provided for the Activity Center Place Type:

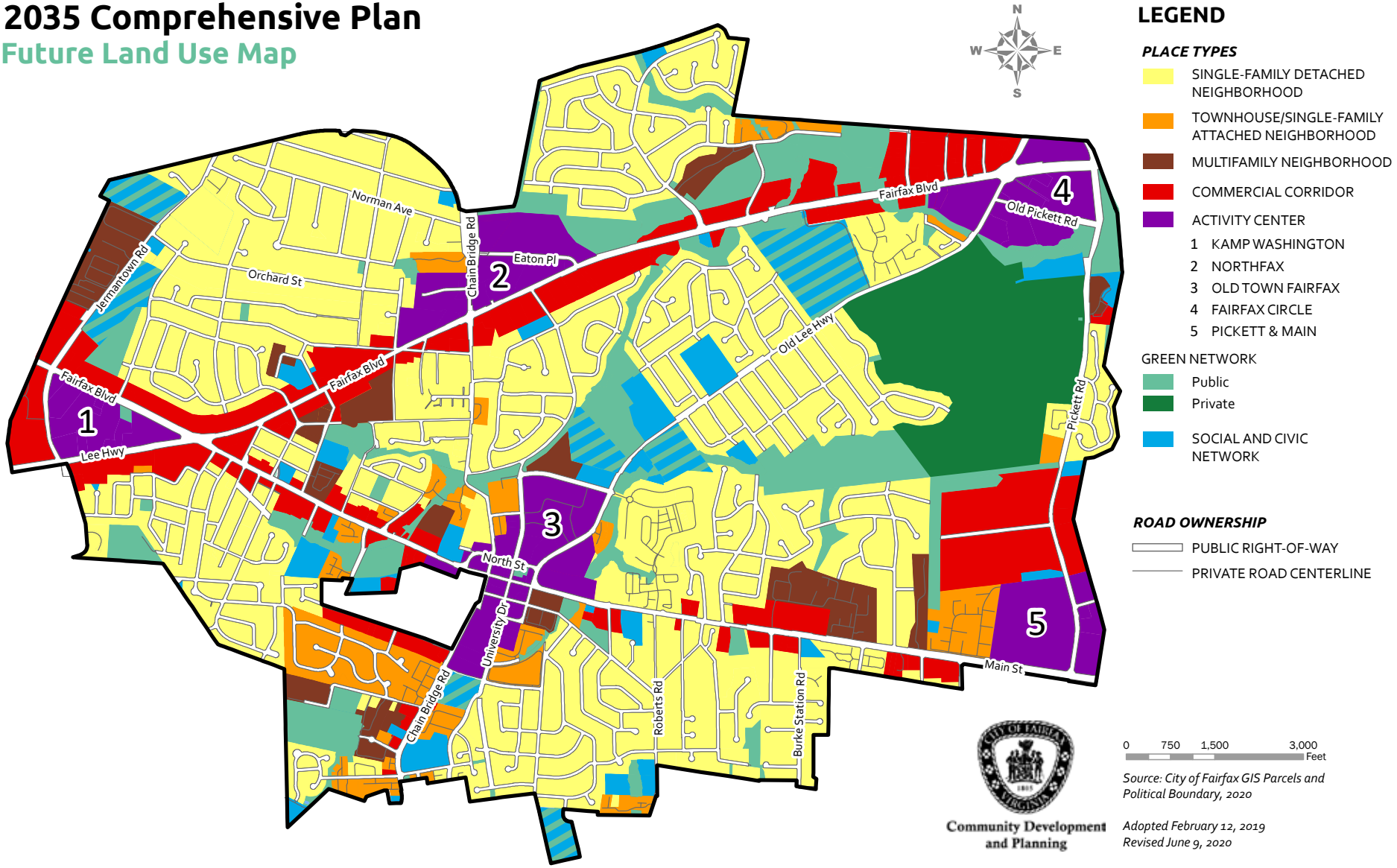
6. Use Characteristics: Since multiple uses can be accommodated in the Activity Center Place Type, separate physical characteristics are provided for various uses to ensure that new development provides a consistent character in spite of varying uses.
7. Residential Limitations: As a more detailed analysis of specific development scenarios is not included in this plan, limitations on the number of residential units that can be absorbed in each Activity Center are provided. This is intended to communicate to developers and the general public that unrestrained increases in residential development will not be considered in these areas of the City.

Small Area Plans

Small Area Plans are an opportunity to conduct detailed analyses of concentrated geographic areas of the City and provide more specific recommendations on issues such as land use and transportation than that provided in the Comprehensive Plan. Once approved, Small Area Plans serve as the primary source for guidance on development in the respective Activity Centers. As supported by Land Use Action CCAC2.3.5, Small Area Plans are proposed for each of the five Activity Centers. As each of the Small Area Plans is completed and adopted, the recommendations from that plan will supersede the Activity Center Place Type recommendations from the Future Land Use Map. This may include the guidance provided for Physical Characteristics, appropriate Street Types, Use Characteristics, and Residential Limitations.

In June 2020, Small Area Plans were adopted for the Old Town Fairfax and Northfax Activity Centers. While a brief description of these two Activity Centers is provided in the Activity Center Place Type description, please refer to the respective Small Area Plans for specific guidance in those two areas. The general guidance in the Activity Center Place Type description applies to Kamp Washington, Fairfax Circle, and Pickett & Main until Small Area Plans are adopted for those Activity Centers.

FIGURE 9 FUTURE LAND USE MAP



SINGLE-FAMILY DETACHED NEIGHBORHOOD

Definition

The Single-Family Detached Neighborhood Place Type, identified in yellow on the Future Land Use Map, applies to neighborhoods that are primarily developed with single-family detached homes. Accessory uses associated with these residences are permitted, such as home-based businesses and accessory dwelling units.

Physical Characteristics

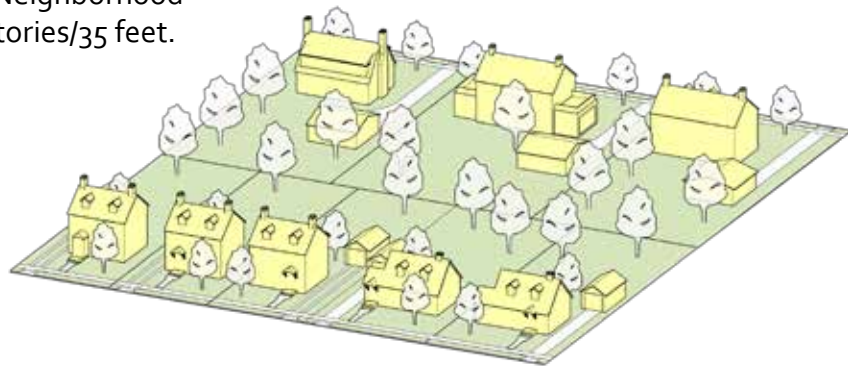
New development of single-family detached homes in an existing residential neighborhood should reflect the character of that neighborhood by providing similar lot widths and building setbacks as surrounding properties. In order to support shared stormwater management facilities and usable open space, narrower lot widths and building setbacks may be considered where a new development provides a similar overall density to the surrounding neighborhood. New development is considered to be within an existing neighborhood where any vehicular access is taken from an existing Limited Connection Residential street or a Neighborhood Circulator. New residential units on all lots that are adjacent to those streets should be oriented with the front of the structure facing that street, even where vehicular access is taken from a new public or private street. Predicated on the underlying zoning district, the Single-Family Detached Neighborhood Place Type supports up to 7 dwelling units per acre and a maximum height of 3 stories/35 feet.

Zoning Districts

- RL, Residential Low
- RM, Residential Medium
- RH, Residential High
- PD-R, Planned Development Residential

Link + Place Street Types

- Limited Connection Residential
- Neighborhood Circulators
- Some existing Single-Family Detached Neighborhoods are present along Avenues and Boulevards, such as portions of Chain Bridge Road, Old Lee Highway, and Main Street.



TOWNHOUSE/SINGLE-FAMILY ATTACHED NEIGHBORHOOD

Definition

The Townhouse/Single-Family Attached Neighborhood Place Type, identified in orange on the Future Land Use Map, applies to neighborhoods that are primarily developed with townhouses and single-family attached or duplex housing. Single-family detached uses may be considered in the Townhouse/Single-Family Attached Neighborhood Place Type when developed in conjunction with Townhouse/Single-Family Attached Neighborhood uses.

Physical Characteristics

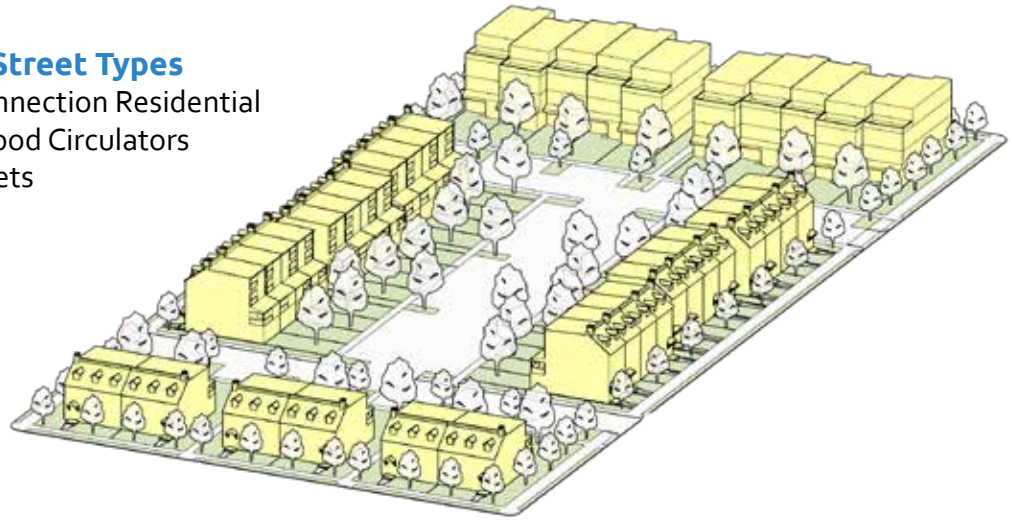
The design and layout of new Townhouse and Single-Family Attached Neighborhood developments should reflect the location of the development within the City. In particular, development that is adjacent to Single-Family Detached Neighborhoods within City limits, or to neighborhoods zoned primarily for single-family detached residences within adjacent jurisdictions, should have a maximum of three floors and provide landscaped setbacks for that portion of the site that is adjacent to any such neighborhood. Otherwise, a building height of up to four stories or 45 feet may be considered. Predicated on the underlying zoning district, the Townhouse/Single-Family Attached Neighborhood Place Type supports up to 12 dwelling units per acre.

Zoning Districts

- RT, Residential Townhouse
- RT-6, Residential Townhouse
- PD-R, Planned Development Residential

Link + Place Street Types

- Limited Connection Residential
- Neighborhood Circulators
- Active Streets
- Avenues
- Boulevards



MULTIFAMILY NEIGHBORHOOD

Definition

The Multifamily Neighborhood Place Type, identified in brown in the Future Land Use Map, applies to neighborhoods that are primarily developed with multifamily apartment or multifamily condominium housing. Townhouse/Single-Family Attached Neighborhood uses and Single-Family Detached Neighborhood uses may be considered in the Multifamily Neighborhood Place Type when developed in conjunction with Multifamily Neighborhood uses.

Physical Characteristics

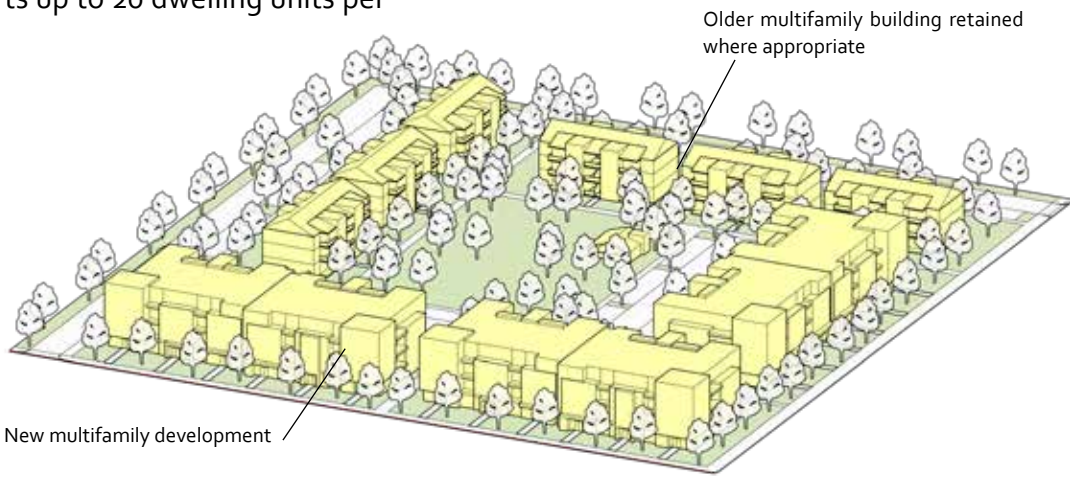
The design and layout of new Multifamily Neighborhood developments should reflect the location of the development within the City. Development that is adjacent to Single-Family Detached or Townhouse/Single-Family Attached neighborhoods within City limits, or to neighborhoods zoned primarily for single-family detached or single-family attached residences within adjacent jurisdictions, should have a maximum of three floors and provide landscaped setbacks for portions of the site that are adjacent to any such uses. Otherwise, a building height of up to four stories or 45 feet may be considered. In order to retain the relative affordability available in many existing multifamily structures, redevelopment of existing multifamily sites within Multifamily Neighborhood land use areas, where additional density is permitted by the Zoning Ordinance, should consider accommodating existing multifamily structures. Predicated on the underlying zoning district, the Multifamily Neighborhood Place Type supports up to 20 dwelling units per acre and a maximum height of 4 stories/45 feet.

Zoning Districts

- RMF, Multifamily
- PD-R, Planned Development Residential

Link + Place Street Types

- Limited Connection Residential
- Neighborhood Circulators
- Active Streets
- Avenues
- Boulevards



COMMERCIAL CORRIDOR

Definition

The Commercial Corridor Place Type, identified in red on the Future Land Use Map, includes a mix of retail, restaurant, service, medical, office, and other commercial uses. Limited manufacturing and other light industrial uses may also be considered. Heavy industrial uses should not be added or expanded beyond areas where they currently exist (such as the tank farm on Pickett Road). Residential uses are not recommended in Commercial Corridors. Commercial areas should accommodate access via a variety of transportation modes and be accessible to adjacent neighborhoods via pedestrian and bicycling facilities.

Physical Characteristics

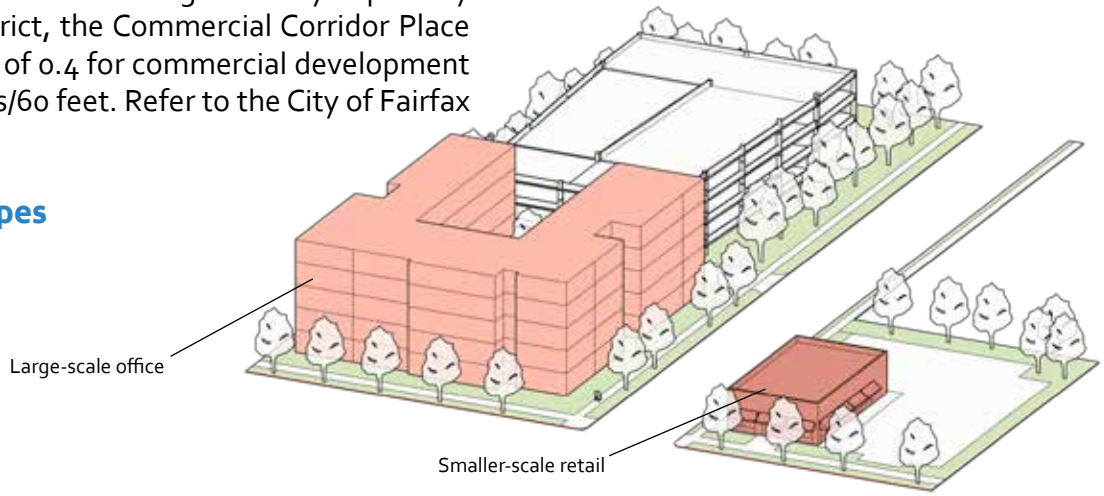
Commercial Corridor Place Types can accommodate a variety of buildings from small footprint retail buildings to multi-story office buildings. The desired orientation and placement of buildings on a Commercial Corridor site is primarily dependent on the adjacent Street Type. For sites located along Commercial Mains, buildings should have similar setbacks and building orientation as recommended for the nearby Activity Centers. Parking is encouraged in above-ground structures or underground, should be provided to the side or rear of buildings, and should be screened from view from the right-of-way by building mass or landscaping. For sites located along Boulevards or other street types, buildings should be located near front property lines with parking provided to the side or rear. Direct pedestrian access should be provided from the sidewalk in the right-of-way to primary building entrances. Predicated on the underlying zoning district, the Commercial Corridor Place Type supports a density of a minimum Floor Area Ratio (FAR) of 0.4 for commercial development and a maximum building height of 3 stories/35 feet to 5 stories/60 feet. Refer to the City of Fairfax Design Guidelines for more specific guidance on site design.

Zoning Districts

- CL, Commercial Limited
- CO, Commercial Office
- CR, Commercial Retail
- CG, Commercial General
- IL, Industrial Light
- IH, Industrial Heavy
- PD-C, Planned Development Commercial
- PD-I, Planned Development Industrial

Link + Place Street Types

- Boulevards
- Commercial Mains



ACTIVITY CENTER

Definition

The Activity Center Place Type, identified in purple on the Future Land Use Map, applies to locations in the City where pedestrian-oriented, mixed-use development is strongly encouraged. (Mixed-use development is pedestrian-oriented development that allows multiple activities to take place by layering compatible land uses, public amenities, and active streets accommodating multimodal transportation, and community-serving commercial.) Uses should be integrated as a mix of commercial uses, multifamily housing, and townhouses, either in the same building (i.e., vertical mixed-use) or as a combination of single-use buildings featuring a range of complementary uses within the Activity Center (i.e., horizontal mixed-use).

Physical Characteristics

Activity Centers can accommodate a variety of building types based on the different uses permitted and varying characteristics among individual Activity Centers. Recommended physical characteristics for specific uses are provided under Use Characteristics (p. 33) and more specific recommendations are provided for the Old Town Fairfax and Northfax Activity Centers on the following pages. The Comprehensive Plan also recommends Small Area Plans be developed for each of the City's five Activity Centers. As each of these plans is completed and adopted, the recommendations will supersede the pre-existing guidance of this Comprehensive Plan.

In general, new development in Activity Centers should support a connected street network as recommended in the Multimodal Transportation Chapter of the Comprehensive Plan; provide an improved streetscape and pedestrian connections to surrounding uses, including links to the existing pedestrian network; and include inviting public and/or private open spaces. Parking should be provided in structured or below-grade facilities where reasonable.

Development in Activity Centers must meet the Code of Virginia definition for an Urban Development Area (Virginia Code § 15.2-2223.1) and follow the recommendations for Private Site Design and Elements in the applicable district of the City of Fairfax Design Guidelines. Predicated on the underlying zoning district, the Activity Center Place Type supports a density of a minimum FAR of 0.4; at least six townhouses or at least 12 multifamily dwelling units per acre; or any proportional combination of residential and commercial densities with building heights predominantly five stories or less, unless otherwise specified in an adopted Small Area Plan.

Photo Credit: Hord Coplan Macht

ACTIVITY CENTER (con't)

Use Characteristics

Office: Office uses are acceptable as components of mixed-use buildings or as stand-alone buildings.

Retail: Retail uses may be provided on the ground floor of mixed-use buildings, as stand-alone buildings, or on upper floors of buildings where larger tenant floor area requirements would detract from an active presence on the first floor. Retail uses are preferred along Commercial Mains, except where indicated otherwise in adopted Small Area Plans, but may be provided at other locations within an Activity Center.

Hotel: Hotels are acceptable as components of mixed-use buildings or as stand-alone buildings. Hotels are particularly encouraged in high visibility locations along Commercial Mains and at key intersections, or as may otherwise be identified in adopted Small Area Plans.

Public, Civic, and Institutional: Public, civic and institutional uses that are allowed by special use permit in commercial districts in the Zoning Ordinance may be provided as components of mixed-use buildings or as stand-alone buildings.

Residential Multifamily: Residential multifamily uses are acceptable as components of mixed-use buildings or as stand-alone buildings. Ground floor residential uses in multifamily or residential mixed-use buildings, including accessory spaces and amenities but not including residential lobby areas, should not be provided along Commercial Mains, unless such uses are identified in adopted Small Area Plans. Where ground-floor residential units are located adjacent to Active Streets or Commercial Mains, direct exterior access should be provided to individual units.

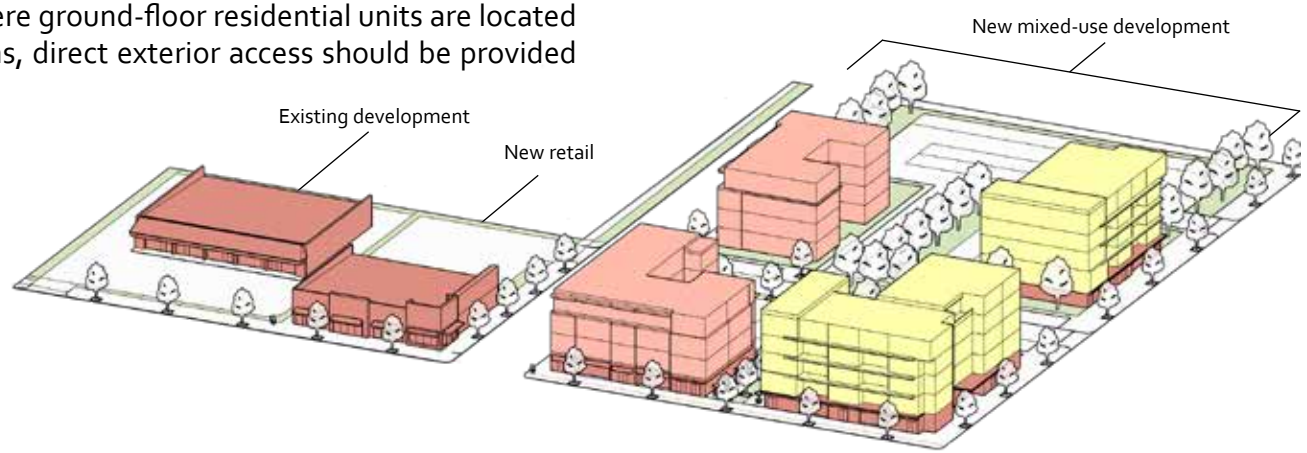
Townhouse: Residential townhouses should only be considered to serve as a transitional use to existing development outside of the Activity Center.

Zoning Districts

- CU, Commercial Urban
- PD-R, Planned Development Residential
- PD-C, Planned Development Commercial
- PD-M, Planned Development Mixed Use

Link + Place Street Types

- Active Streets
- Commercial Mains



ACTIVITY CENTER (con't)

Residential Limitations

The majority of future residential growth is anticipated to occur within the five Activity Centers identified in the Future Land Use Map. Refer to adopted Small Area Plans for specific recommendations on growth in each Activity Center. For Activity Centers for which a Small Area Plan has not yet been adopted, any unified development application within an Activity Center that contains a residential component should have a density of no more than 48 dwelling units per acre. Such developments must offer benefits that support the vision of the Comprehensive Plan for the Activity Center. Such benefits should include the following:

1. A mix of uses within the development site;

2. Contributions toward a connected street grid;

3. Usable open space, and;

4. High quality design.

Should a unified development application fail to offer these benefits, that development may contain no more than 20 dwelling units per acre.

Direct fiscal benefits to the City from residential developments are not typically as strong as those from commercial properties. In order to avoid significant displacement of commercial uses in Activity Centers, new residential development should first focus on lower value commercial or industrial sites unless a significant commercial component is included. Conversion of commercial space in existing buildings into residential space is not generally supported.

ACTIVITY CENTER - OLD TOWN FAIRFAX

The Old Town Fairfax Activity Center ("Old Town Fairfax") encompasses a cultural hub for the City, with a concentration of historic buildings, public services, active open space, and commercial buildings. Old Town Fairfax can also capitalize on its proximity to George Mason University to attract university supported businesses and arts and entertainment venues. The entirety of Old Town Fairfax is within the Old Town Fairfax Historic Overlay District (HOD) or the Old Town Fairfax Transition Overlay District (TOD) and is subject to those provisions of the Zoning Ordinance and the City of Fairfax Design Guidelines.

Refer to the Old Town Fairfax Small Area Plan, dated June 2020, for specific recommendations within Old Town Fairfax, including locations for future streets and open spaces, opportunities for pedestrian connections across Commercial Mains, building form (including appropriate locations for more or less restrictive building heights from the Activity Center standards), and general land use and development limitations. The overall concept plan for Old Town Fairfax, as provided in the Small Area Plan, is shown to the right.

ACTIVITY CENTER - NORTHFAX

The Northfax Activity Center ("Northfax") is considered the most appropriate location in the City to accommodate a regional mixed-use destination. Its location at the intersection of Fairfax Boulevard and Chain Bridge Road, with immediate access to Interstate 66 and a potential future Metro station, is more accessible than other Activity Centers. It is also equidistant from existing regional mixed-use destinations at Merrifield and Fairfax Corner. In order to leverage these characteristics, the City should strive to market Northfax to a wide range of commercial tenants and retail uses in order to take advantage of these benefits. New residential uses and amenities such as open spaces and a pedestrian-friendly multimodal transportation network, should also be leveraged to improve the commercial marketability of the Activity Center.

Refer to the Northfax Small Area Plan, dated June 2020, for specific recommendations within the Northfax Activity Center, including locations for future streets and open spaces, pedestrian connections, building height and form, general land use, and development limitations. The overall concept plan for Northfax, as provided in the Small Area Plan, is shown to the right.

SOCIAL AND CIVIC NETWORK

Definition

The Social and Civic Network Place Type, identified in blue on the Future Land Use Map, includes public and private schools, libraries, places of worship, post offices, and other public facilities There are no specific corresponding Link + Place Street Types for this category because the varying types of Social and Civic Network land uses are appropriate in a variety of conditions. There is no zoning district specifically related to this Place Type. More information on the zoning districts for which uses in this Place Type are permitted, or constitute a special use, is provided in the Principal Use Table in the Zoning Ordinance. In order to support the recommendations of the Housing Guiding Principle in this chapter, residential uses may be considered in conjunction with other uses in the Social and Civic Network Place Type, provided such residential uses are considered affordable.

Physical Characteristics

New development of, or modifications to existing, social and civic uses located in any Residential Neighborhood should complement the character of the surrounding properties and provide transitional screening where necessary. Any new, or modifications to, existing social and civic uses located in an Activity Center should reflect the typical context of the center. New buildings should be oriented towards the street network and provide additional pedestrian connections to surrounding uses as recommended in the Multimodal Transportation Chapter of the Comprehensive Plan.

GREEN NETWORK

Definition

The Green Network Place Type includes public spaces, such as active and passive parks, trails, playing fields, public recreation facilities, cemeteries, open space, and private facilities such as golf courses and private open space. There are currently no zoning districts specifically related to this Place Type. Green Network uses are permitted in the CR, Commercial Retail; CU, Commercial Urban; and CG, Commercial General zoning districts and constitute a special use in all of the residential zoning districts. Outdoor recreational uses, such as tennis courts and golf courses, are permitted as a special use in all of the nonresidential zoning districts except for CL, Commercial Limited.

Physical Characteristics

New recreational facilities shall provide connections to the pedestrian and street network as recommended in the Multimodal Transportation Chapter of the Comprehensive Plan. Proposed connections to other green spaces to complete the network should be prioritized for recreation and transportation purposes as well as ecological benefits. Properties in the network also include natural areas for conservation and protection. Parking facilities for specific recreational uses shall be integrated into the site so as not to prioritize vehicular access over pedestrian connections.




Parcel Specific Considerations

In some cases, the appropriate Place Type for a parcel or group of parcels can vary based on the specifics of design, changes in market demand and variations in surrounding conditions. Several sites in the City have been identified for further consideration of their Place Type designation based on these factors. These sites are identified on the map to the right and described below. While alternatives may be considered, the existing Place Type designation on the Future Land Use Map is the primary recommendation for each site. This list may be expanded in future modifications of this in plan. In particular, potential alternative Place Type designations should be considered for privately-owned sites with a Social and Civic Network designation.

1. Inova and Sunrise Assisted Living

The Inova Emergency Care site, located on Chain Bridge Road, School Street, and George Mason Boulevard, encompasses 9.6 acres and is currently occupied by the Inova Fairfax Emergency Care Center, Sunrise Assisted Living, and the PACE senior medical care center. This site is likely to become available for redevelopment within the next few years. Its unique location makes it suitable for different uses to include commercial, multifamily, and/or townhouse uses. Commercial uses are appropriate along Chain Bridge Road. Any multifamily development should provide substantial buffering to abutting residential uses to the north. Building heights should be no more than three floors along the north, east, and south property lines. Additionally, townhouse uses may be considered as a transition to adjacent, lower-density residential uses.

2. Park Road Properties

Four properties located along Park Road, totaling 0.89 acres, are located within the Westmore Neighborhood but are commercially zoned. Two of the parcels contain a commercial building. The other two parcels contain single-family residential buildings, though one is occupied by a commercial business. Given the location of these lots and their dependence on access from within the neighborhood, alternative uses may be more appropriate than a commercial zoning designation.

Single-family attached residential uses would provide a logical transition between the single-family detached neighborhood to the south and commercial uses to the north. Single-family detached residential uses may also be appropriate. Commercial uses may be appropriate if the properties are consolidated with commercial properties to the north so vehicular access is not dependent on Park Road.

3. Oak Street Properties

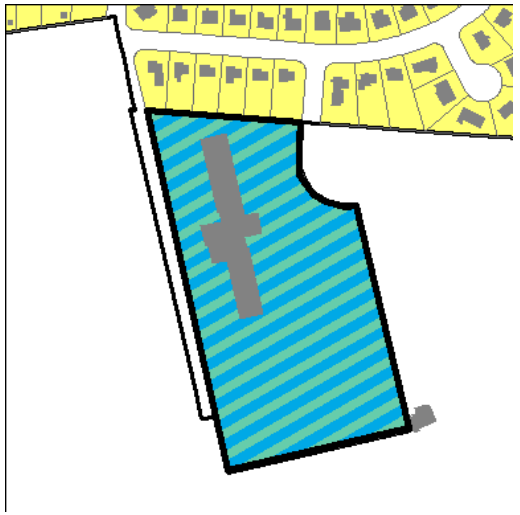
Five parcels (059 through 063 on the attached map) located along the west side of Oak Street between Fairfax Boulevard and Cedar Avenue are designated as Single-Family Attached and Single-Family Detached though they are surrounded by higher intensity uses, including the potential Fairfax Garden redevelopment to the west and commercial uses to the north and east. While the Place Type designation supports the current uses, these properties may be appropriate for a Multifamily Neighborhood Place Type designation if they are all included in a parcel consolidation. Alternatively, parcel 063 may be appropriate for a Commercial Corridor designation if it is consolidated with properties with that Place Type designation to the north.

4. Farr Homeplace

This 9.4-acre property located along Main Street between Farrcroft and Main Street Marketplace is privately-owned and the location of the "Farr Homeplace," also known as "Five Chimneys." There is a Resource Protection Area in the rear of the property. Although no historic designation exists, it should be explored for inclusion within a Historic Overlay District. An alternate use may include Single-Family Attached Neighborhood. Any development should retain the existing house, minimize disturbance in the Resource Protection Area, and consider appropriate relationships with the Farrcroft neighborhood to the east.

5. Green Acres

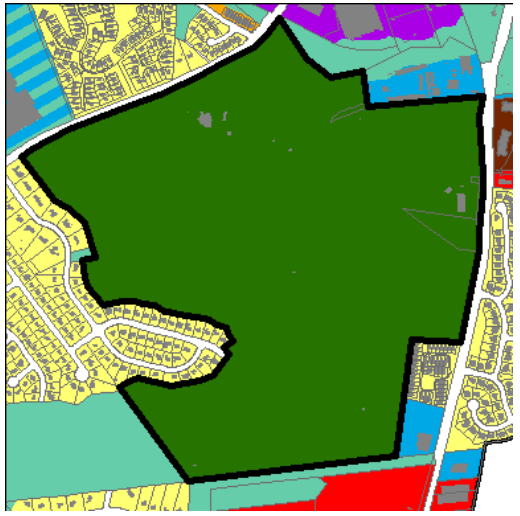
The Green Acres site encompasses 10 acres of land surrounded by George Mason University with one street leading to it through a residential neighborhood. The 2016 Green Acres Feasibility Study found that it is not best suited for the community center use it currently serves and recommended a new community center be constructed elsewhere in the City. The study proposed three alternatives for the future use of the Green Acres site; retaining the entire site for future community uses, selling the entire site, or retaining a portion of the site for community use and selling a portion of the site. The study does not recommend specific uses.



The City of Fairfax School Board reserves the right to retain the site for construction for a future school if necessitated by enrollment demands. This is governed through a covenant on the property. For this reason, the Social and Civic Network Place Type designation should remain. If this covenant is transferred to another property in the City, it would no longer be needed at Green Acres, and the site would become available for other uses.

6. Army Navy Country Club

Covering approximately 234 acres, the Army Navy Country Club is the largest individual property in the City and the largest area of open space. While there are no known plans for the Country Club to vacate or for the property to be developed, and this plan supports continued use of the property for open space, priorities for the future of the site should be considered. Given the wide array of potential implications development of this site could have on the various Guiding Principles for the City, an advisory committee should be formed to conduct a comprehensive analysis and provide recommendations on key priorities if development becomes likely.



7. 4328 Chain Bridge Road

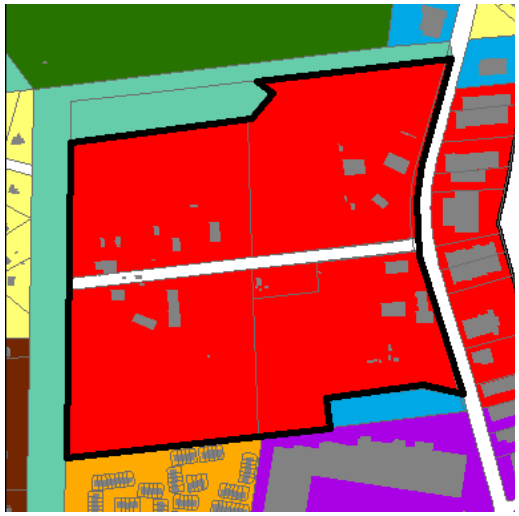
Encompassing just over half an acre, this site is located on the northwest corner of Chain Bridge Road and School Street. Adjacent properties to the north, west and south are occupied by fairly new townhomes and single-family homes that are not expected to be redeveloped within the timeframe of this plan. Redevelopment on this site should be limited to three stories to integrate with surrounding development. An alternative use for the site could include townhomes for which partial fourth stories could be considered for portions of the site that are not directly adjacent to shorter buildings.

8. Mantua Professional Center

The Mantua Professional Center was originally approved as an office development in 1975, though only a portion of the approved development was ever constructed. Since that time, the original approved plan has been amended several times, including separate amendments that converted portions of the site to be used as a private school and multifamily condominiums. As a result, the current complex is now occupied by three distinct uses. Alternative uses could include multifamily residential or townhomes in the portions of the site currently designated as Commercial Corridor and Social/Civic Network. Any expansion of residential uses in the complex should be cognizant of existing neighborhoods to the south and east and should provide adequate transitions in these areas.

9. Tank Farm

The Pickett Road tank farm comprises above-ground storage for four commercial gasoline and fuel oil facilities and an underground pipeline station on approximately 71 acres. No expansion of the existing heavy industrial uses at this site would be appropriate, and the Commercial Corridor place type is recommended for future development. While there are no known plans for the tank farm to be redeveloped, guidance on development priorities and alternative uses that complement recommendations for the Pickett & Main Activity Center should be established for the site.

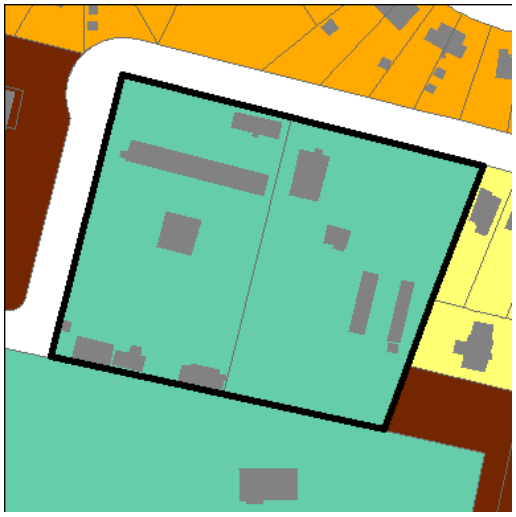


Fairfax County Property Yards

Fairfax County currently owns and manages three property yards within the City, located on West Drive, Jermantown Road, and Main Street. Fairfax County may consider some of these locations for closure in order to provide more efficient services from a consolidated, centralized location. Should Fairfax County choose to vacate any of these locations and dispose of the properties, the City should consider pursuing acquisition. These properties have been identified as potential locations for park uses, open space, affordable housing partnerships between the City and non-profit entities, school sites, property yard functions, or other uses.

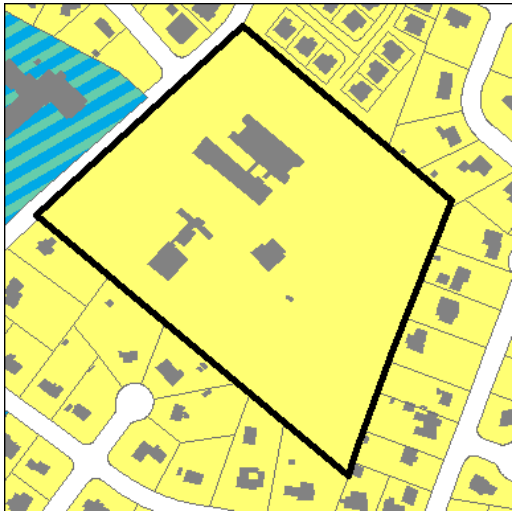
10. West Drive

The two properties that make up the West Drive property yard site encompass 4.2 acres and present a logical extension of the adjacent Providence Park. Their inclusion in the park area would also make Providence Park large enough to host a potential future elementary school in place of the Green Acres site, should that site be desired for other uses. If the City does not acquire this site, it is most suitable for residential development, including single-family detached, single-family attached, or multifamily units. Residential development should provide logical transitions to adjacent uses, particularly along the eastern property line where it abuts existing single-family uses.



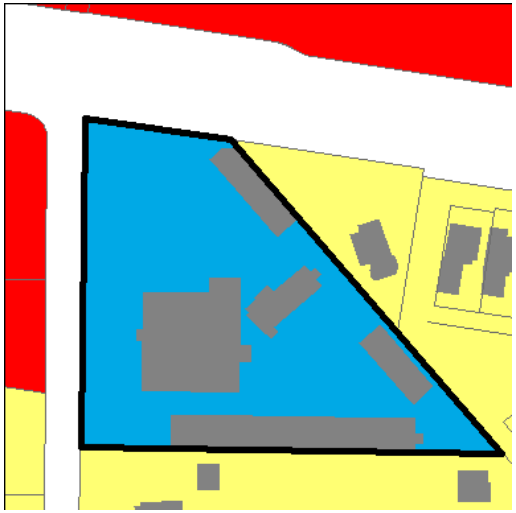
11. Jermantown Road

If this 15-acre property discontinues its function as a property yard and the City does not acquire it, single-family detached residential uses are an appropriate use, consistent with surrounding uses. The cemetery on this parcel should not be impacted by any redevelopment.



12. Main Street

This 2.45-acre parcel is bounded on two sides by roads, Main Street and Burke Station Road. If the City obtains this site, one potential reuse would be a relocation of some of the City's public works services, currently located at the Property Yard on Pickett Road. The existing property yard has flooding issues and diminishing space. The Parks and Recreation Strategic Plan also recommends identification of new potential park sites in the southeast portion of the City. While this site is relatively small, open space uses would provide an amenity in a portion of the City in which open space is not abundant. If the City does not purchase this property, appropriate uses include single-family detached, single-family attached, or commercial uses.



Neighborhoods

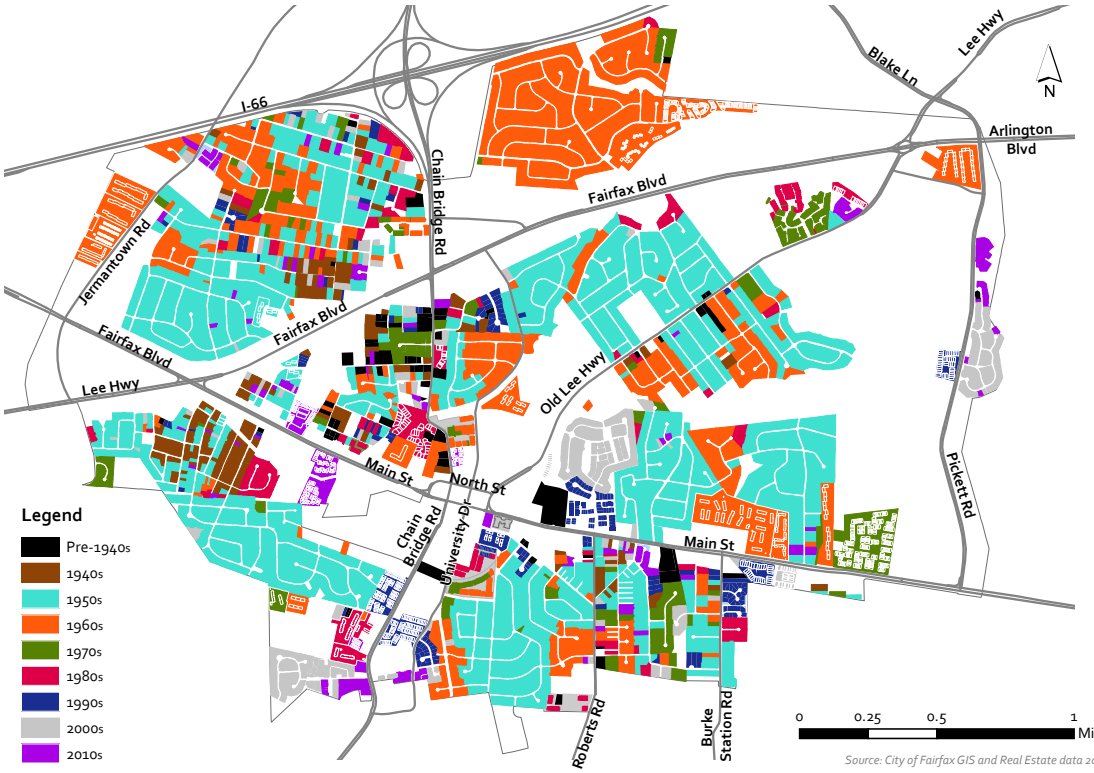
Neighborhoods – the places where we live, learn, play, and increasingly work – constitute the largest geographical use of land in the City, though physical boundaries are not the only defining character trait of a neighborhood. Numerous characteristics define neighborhoods, including the period of building and development (Figure 10), subdivision patterns, architectural style, location of public amenities and services, and presence of social or civic organizations. The City's neighborhoods each have their own unique character and offer a variety of housing and lifestyle opportunities.

Neighborhoods are supported by a separate Guiding Principle in this Plan due to their importance to residents. City growth and development policies must both preserve the quality of neighborhoods and protect neighborhoods from adverse consequences of growth. However, this should not imply that Fairfax's neighborhoods should remain static. Well-designed and properly scaled infill can be an appropriate strategy to foster walkability, better amenities, and housing affordability. This section's goals strive to balance these concerns and take advantage of opportunities through improved policies and regulations, and increased communication with and within the community.

Guiding Principle:

In 2035, Fairfax is a city with…
inviting neighborhoods, each with its own unique character.

FIGURE 10 HOUSING AGE BY DECADE BUILT



Neighborhoods

Goal 1

Enhance neighborhood character.

There is relatively little undeveloped land available in the City for new residential neighborhoods. As the City's housing stock ages, replacements for, or additions to, existing structures will be the prevalent methods of updating housing to meet current market demands. The City should use this as an opportunity to enhance the character and inclusiveness of the City's neighborhoods. Any modification or new construction on residential lots located in established neighborhoods should be compatible with the character of that neighborhood. In order to encourage reinvestment in neighborhoods, the City and civic associations should educate residents about programs available to them (such as Fairfax Renaissance Housing Corporation loans) and the processes involved in updating their homes.

OUTCOME N1.1:	Infill housing that complements the character of surrounding homes in existing neighborhoods.
ACTION N1.1.1	Maintain regulatory standards to ensure infill housing fits in with the surrounding neighborhood context.
OUTCOME N1.2:	Residents have regular communication and positive interactions with other members of their neighborhood as well as the larger City community.
ACTION N1.2.1	Encourage and support community engagement through homeowner, condominium, and civic associations.
ACTION N1.2.2	Establish regular communication with homeowner, condominium, and civic associations and residential property managers as a means to keep individual citizens informed about City business.

Neighborhoods
Goal 2

Provide neighborhood pedestrian connections.

Walkability was frequently cited as a desired attribute of the City during the Comprehensive Plan's public outreach process. Ensuring our neighborhoods are designed to both encourage pedestrian activity and to provide various transportation alternatives will enable people of all abilities to get around the City efficiently and reduce traffic congestion. Improving walkability is not just about adding more sidewalks and trails, but also looking at destinations residents can walk to – such as parks, schools, Commercial Corridors, Activity Centers, and other local destinations – and identifying the condition of the transportation network that can get them there. The strength of a network to get someone from point A to point B is only as good as its weakest link.

OUTCOME N2.1:	Residents of all abilities safely and easily move about the community.
ACTION N2.1.1	Identify opportunities for future open space and trails in neighborhoods that are currently deficient in offering these amenities.
ACTION N2.1.2	Expand existing pedestrian network to increase connectivity within neighborhoods and to other destinations.

Commercial Corridors and Activity Centers

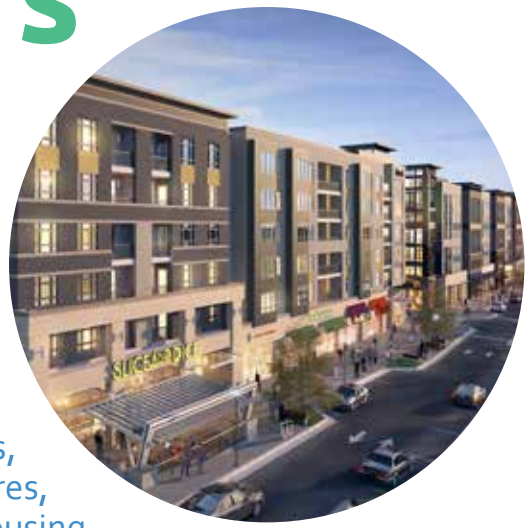


Photo Credit: Hord Coplan Macht

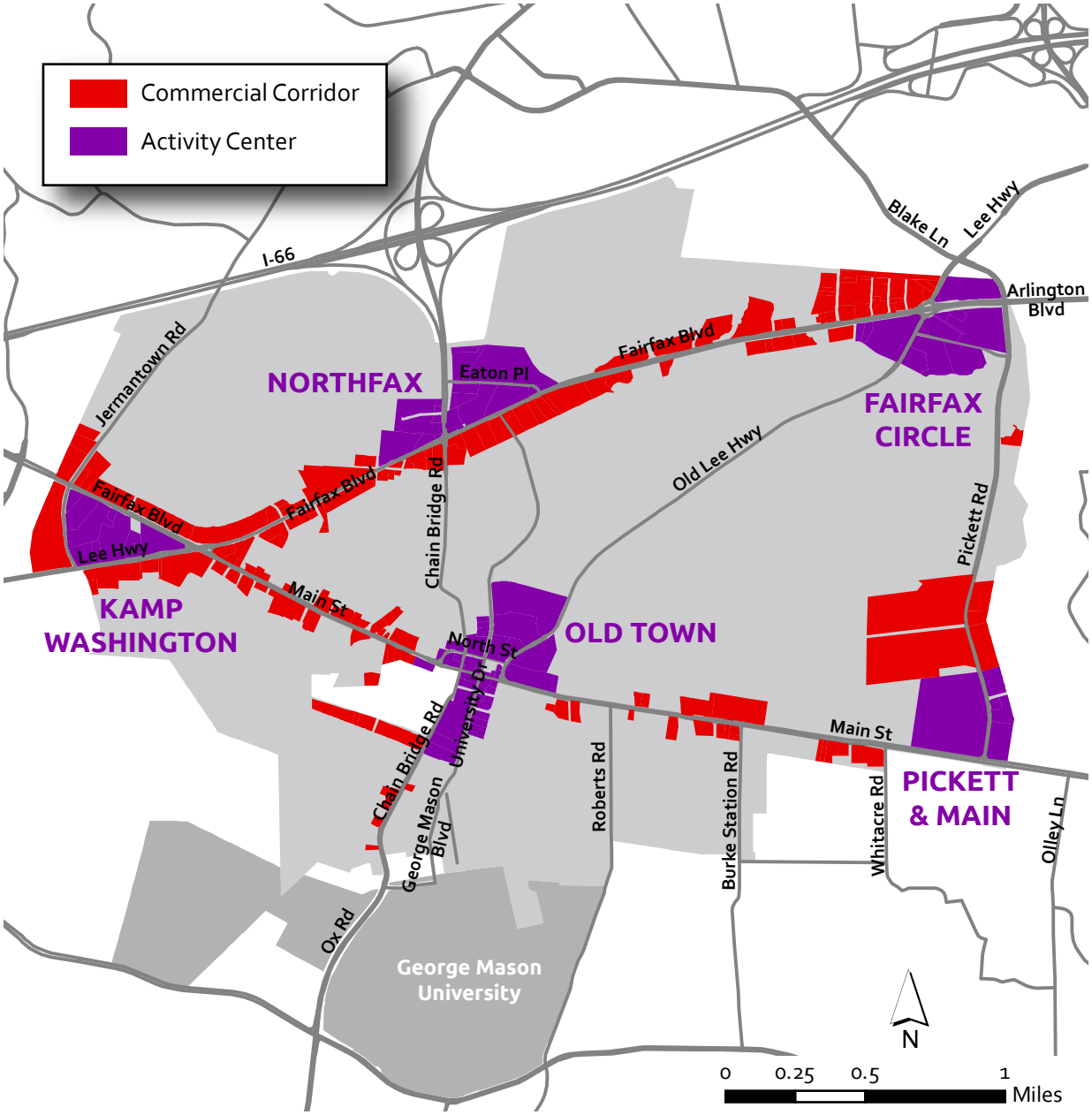
Guiding Principle:

In 2035, Fairfax is a city with…
flourishing centers of commercial and mixed-use activity that include an assortment of grocery stores, restaurants, cafes, entertainment venues, retail stores, offices, and housing.

Fairfax's success in achieving the community's vision for future development hinges upon effective growth strategies for the City's areas of highest redevelopment potential. These areas will accommodate the majority of new commercial activity, higher density residential neighborhoods, and transportation improvements. Success in achieving this vision will be measured not by the magnitude of new investment, but rather by the attributes that can transform a disjointed pattern of development into an attractive and welcoming neighborhood. If the City's Commercial Corridors and Activity Centers can be transformed into areas with attractive physical characteristics and a mix of uses, then the City will realize a major aspect of its goal to be a vibrant 21st century community.

While higher intensity mixed-use redevelopment of older commercial properties can provide economic and social benefits to the community, these benefits would be most realized if concentrated in key areas to allow new developments to complement each other, avoid oversaturating the market, and minimize impacts to existing neighborhoods. These types of uses are primarily envisioned in Activity Centers, as indicated on the Future Land Use Map. While a mix of uses and connected street grids are envisioned in all Activity Centers, such development is always encouraged in the Old Town Fairfax and Northfax Activity Centers. More specific guidance is provided for these two areas in the Activity Center Place Type (pages 35-36) and through the goals of this Guiding Principle.

FIGURE 11 ACTIVITY CENTERS AND COMMERCIAL CORRIDORS



While reinvestment and redevelopment of properties in Commercial Corridors is encouraged, incorporation of residential mixed uses is not recommended. Stronger pedestrian orientation and improved aesthetics are encouraged in Commercial Corridors through the physical attributes of the Place Type and recommendations of the City of Fairfax Design Guidelines.

Commercial Corridors and Activity Centers

Goal 1

Enhance Commercial Corridors.

Many commercial properties in the City are underutilized with an overabundance of surface parking. These properties are often suitable for redevelopment, whether to achieve greater use of the land or to make the properties more market competitive. New development and redevelopment must enhance commercial activities along the City's major corridors with a mix of retail, office, and service offerings in an attractive and welcoming setting. Recently-approved projects indicate that there is demand for additional investment in many of these properties.

OUTCOME CCAC1.1:	Commercial Corridors with attractive physical characteristics that provide shopping, dining, services, and other businesses.
ACTION CCAC1.1.1	Encourage commercial redevelopment that offers amenities and atmosphere to attract top-tier commercial tenants.
ACTION CCAC1.1.2	Identify underutilized properties (i.e., buildings assessed at considerably less than the total property value) and, working with the City's Economic Development Authority, encourage redevelopment.
ACTION CCAC1.1.3	Encourage creativity and architectural excellence in new commercial developments.
ACTION CCAC1.1.4	Develop urban design concept diagrams for small block and multi-block areas along the City's Commercial Corridors outside the Activity Centers.
ACTION CCAC1.1.5	Encourage tree-lined and heavily-landscaped property edges, particularly where surface parking is adjacent to the public rights-of-way.
ACTION CCAC1.1.6	Provide pedestrian and bicycle connections to nearby neighborhoods.
OUTCOME CCAC1.2:	Tenants representing diverse business sectors that meet current and emerging trends in neighborhood-serving retail, service, and other business demands.
ACTION CCAC1.2.1	Strengthen existing retail businesses and expand choices to capture retail spending by residents.
ACTION CCAC1.2.2	Create a marketing plan to generate excitement about the current retail and service offerings.

Commercial Corridors and Activity Centers

Goal 2

Promote redevelopment in the City's Activity Centers.

While actions throughout the City will contribute to fulfill the community's vision for the City's future, those pertaining to land use planning in these specific areas carry an outsized importance. The City will promote redevelopment in Activity Centers to strengthen economic vitality; provide retail, office, and residential opportunities for sustained demand; and reinforce the City's regional appeal. Given the potential scope of redevelopment opportunities, new construction in these areas to accommodate various types of housing units and commercial tenants could accomplish many of the goals set forth elsewhere in this Plan's Land Use Chapter.

OUTCOME CCAC2.1:	Old Town Fairfax, including an expanded downtown area to its north and south, is a lively, economically viable, walkable cultural hub for the City.
ACTION CCAC2.1.1	Capitalize on the authenticity and appeal of Old Town Fairfax as an historic place and a shopping, dining, and tourist destination.
ACTION CCAC2.1.2	Attract and retain businesses along Main Street and market it as a primary retail street for Old Town Fairfax.
ACTION CCAC2.1.3	Maximize the use of publicly-owned properties to contribute to the economic and cultural vibrancy of Old Town Fairfax.
ACTION CCAC2.1.4	Encourage redevelopment of privately-owned, underutilized sites north and south of Old Town Fairfax, such as the Courthouse Plaza shopping center and the area west of University Drive between Sager Avenue and Armstrong Street, as mixed-use developments.
ACTION CCAC2.1.5	Market the connection to Old Town Fairfax from George Mason University and emphasize Old Town Fairfax as a desirable place for students and faculty to shop, dine, and live.
ACTION CCAC2.1.6	Support efforts by Fairfax County to develop a Master Plan for the County Courthouse Complex including encouraging improved connections between the complex and surrounding areas, as well as uses that contribute toward, rather than compete with the vibrancy of the Old Town Activity Center.
OUTCOME CCAC2.2:	A pedestrian-oriented, mixed-use destination at Northfax that capitalizes on its location to successfully compete with other regional centers.
ACTION CCAC2.2.1	Pursue feasibility of a public-private partnership to develop parking structures.
ACTION CCAC2.2.2	Consistently articulate expectations for unified developments and support measures that facilitate property consolidation.
ACTION CCAC2.2.3	Encourage the redevelopment of Northfax as a major commercial center and transit-oriented development that capitalizes on a potential future Metrorail station along I-66.

Commercial Corridors and Activity Centers

Goal 2

OUTCOME CCAC2.3:	Old Town Fairfax, Northfax, and the other Activity Centers are well-designed and desirable places to live, work, shop, and dine.
ACTION CCAC2.3.1	Encourage structured parking and minimize surface parking, particularly adjacent to public rights-of-way.
ACTION CCAC2.3.2	Promote the orientation of buildings facing toward streets with architecture that engages street-level activity.
ACTION CCAC2.3.3	Promote active streetscapes with minimal building setbacks, pedestrian amenities, street furniture, on-street parking, landscaping, and other features.
ACTION CCAC2.3.4	Support land planning that balances connectivity for pedestrians, bicyclists, and motorists.
ACTION CCAC2.3.5	Prepare individual Small Area Plans, as defined in Section 15.2-2303.4 of the Code of Virginia, for each of the Activity Centers that clearly demonstrate the desired mix of uses, residential density, building intensity, design aesthetic, specific street locations and multimodal connections, infrastructure improvements, parking, and open space.
ACTION CCAC2.3.6	Target and coordinate public infrastructure improvements with desired infill, reinvestment, and redevelopment areas to encourage and stimulate private development.

Housing

Guiding Principle:

In 2035, Fairfax is a city with… a choice of housing types that meet the needs of our community.

In order to function equitably and inclusively, the City must prioritize the availability of housing units for people of widely varying income levels, ages, and lifestyle choices. While there is great variety among the approximately 9,000 housing units in the City, several types or characteristics of housing may be underrepresented among the current housing mix, especially as other nearby communities undergo redevelopment and expand their offerings.

Although the City is primarily built out, a variety of new housing types can be accommodated through redevelopment on a relatively limited basis to broaden the current offerings and accommodate changing demands. Accordingly, housing that is affordable, housing that is designed for older adults and people with disabilities to accommodate the City's relatively high proportion of older adults, and housing for growing younger families seeking modern single-family housing without leaving the City should be prioritized.

Existing housing units can also accommodate changing demands through renovations and retrofits. Prioritizing additional housing units in underrepresented market segments, improving the functionality of existing housing units, and accommodating in-demand housing types would help to ensure that the City is as welcoming as possible to current and potential residents, regardless of socioeconomic status, age, or other circumstances.

In addition to expanding housing choices, proactive strategies should be taken to ensure that existing housing units that are affordable are preserved and that new units that are affordable are added to the City's overall housing unit mix.

Housing
Goal 1

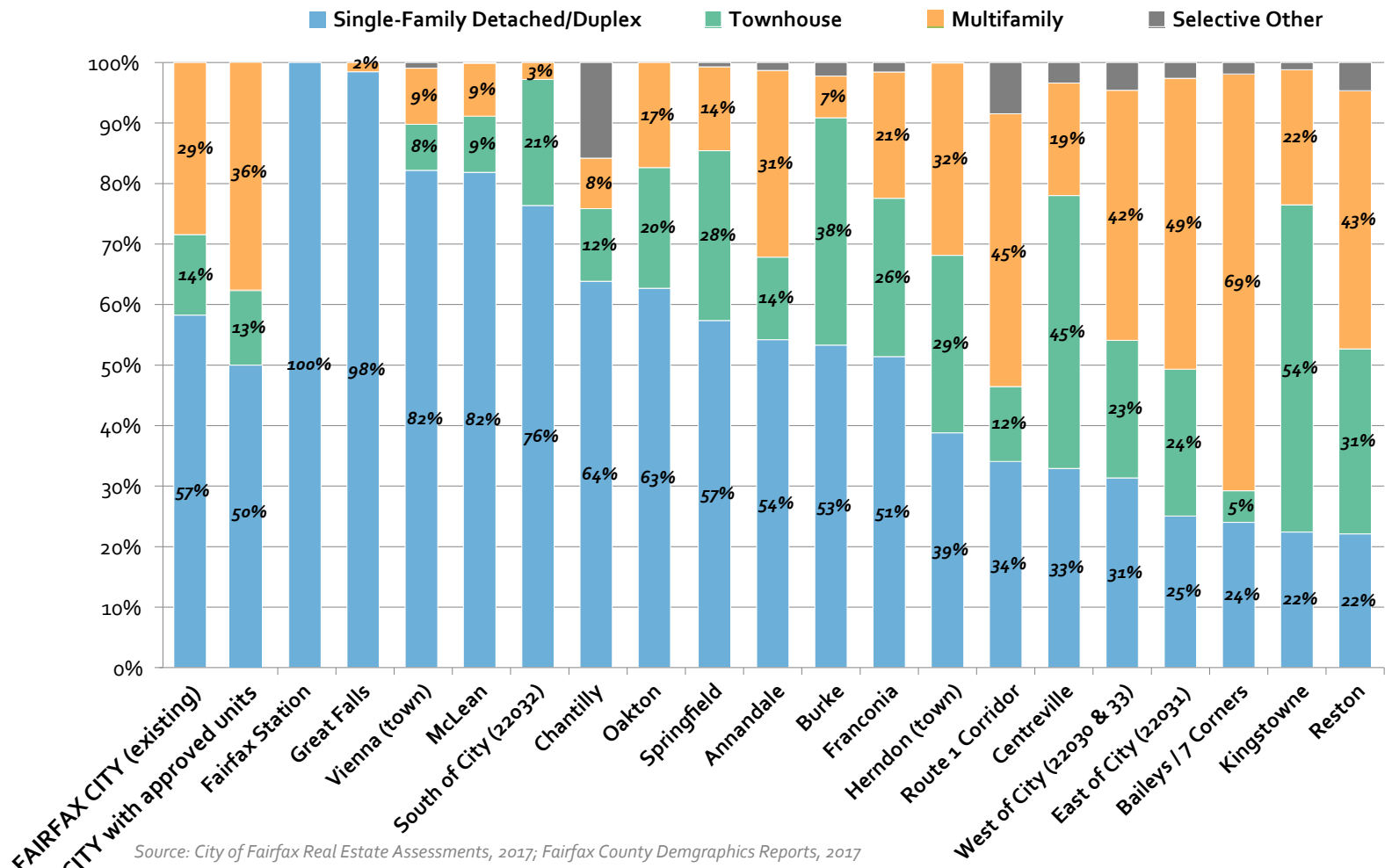
Support a wide range of housing types.

It is vital that a variety of high-quality, attractive housing choices continue to be available in the City to support differing needs and demands of residents. Housing needs and demands are reflective of the existing housing stock and fluctuating market trends, making them subject to change over time. Specific housing types are identified in the Land Use Strategies Section of the Comprehensive Plan. Current shortages could include multifamily rentals and condominiums, of which the majority of the City's stock was built in the 1960s, and townhomes, of which the City currently has a lower ratio than many surrounding communities in Fairfax County. Although significant single-family development is not anticipated as the City is primarily built-out, potential redevelopment and infill housing that keep up with modern expectations and meet demand are encouraged, provided they comply with the Zoning Ordinance.

OUTCOME H1.1:	Continued development of housing types that are underrepresented in the City's existing stock of housing units.
ACTION H1.1.1	Create a housing policy that can best provide for the types of housing units that are most in demand.
1.1.1.1	Conduct a housing assessment to examine the types of housing that are most in demand in the City for a full income range of households, or are most supportive of growing sectors of the local economy.
1.1.1.2	Support development of housing types that are not heavily represented in the City's housing stock, as identified in the housing assessment, where reasonable.
1.1.1.3	Consider efforts to market new and existing housing stock in the City to growing sectors of the regional economy.
ACTION H1.1.2	Research changes to the zoning regulations to expand opportunities for accessory dwelling units, while ensuring they do not negatively impact the surrounding neighborhood.

Figure 12 on the following page provides a comparison of housing type percentages between the City (both current and approved) and other parts of Fairfax County.

FIGURE 12 HOUSING UNITS BY TYPE



Source: City of Fairfax Real Estate Assessments, 2017; Fairfax County Demgraphics Reports, 2017

* City with approved units = Approved and unbuilt units as of the adoption of this Comprehensive Plan.

Housing
Goal 2

Ensure availability of housing that is affordable.

During the Comprehensive Plan outreach process, affordable housing was the primary issue that rose to the forefront of the housing discussion. (Code of Virginia Section 15.2-2201 defines affordable housing as housing that is affordable to households with incomes at or below the area median income, provided that the occupant pays no more than thirty percent of his gross income for gross housing costs, including utilities. However, the actions associated with this goal could target households with incomes below the median.) In addition, Code of Virginia Section 15.2-2223 states that the Comprehensive Plan "shall include the designation of areas and implementation of measures for the construction, rehabilitation and maintenance of affordable housing, which is sufficient to meet the current and future needs of residents of all levels of income in the locality." There are a number of tools available to encourage the establishment of new affordable residential units as well as to preserve existing "naturally occurring affordable housing" that is affordable to families earning below the region's median household income. Affordable housing should be encouraged in higher-density areas of the City, particularly in the Activity Centers.

OUTCOME H2.1:	Affordable housing units have been added to the City's housing stock through redevelopment and strategic investments.
ACTION H2.1.1	Maintain a robust housing affordability program and dedicated housing trust fund that could be used to rehabilitate and preserve existing housing that is affordable or to help leverage other funding streams for new construction.
ACTION H2.1.2	Provide regulatory and financial incentives to increase the supply of affordable housing, including amending the City's Zoning Ordinance to include an Affordable Dwelling Unit ordinance.
ACTION H2.1.3	Pursue a contractual partnership with the Fairfax County Department of Housing and Community Development to administer elements of a housing affordability program for the City.
ACTION H2.1.4	Provide alternative means of accommodating new dedicated affordable housing units, such as leveraging vacant or underutilized public land; supporting or partnering with private, non-profit, or faith-based organizations; and co-locating affordable housing with public construction.
OUTCOME H2.2:	Preservation of and reinvestment in the City's existing supply of affordable multifamily rental housing units.
ACTION H2.2.1	Facilitate partnerships between existing property owners and nonprofit organizations to preserve and ensure long-term affordability of existing multifamily complexes.
ACTION H2.2.2	Promote the use of the Low Income Housing Tax Credits, tax abatements, low-interest loans, the PACE (Property Assessed Clean Energy) Program, and other funding sources available to reinvest in and upgrade existing multifamily complexes.

Housing
Goal 3

Provide housing options for older adults and persons with disabilities.

Housing that is designed for older residents and persons with disabilities was another issue that rose to the forefront of the housing discussion during the Comprehensive Plan's public outreach sessions. Given the relatively high concentration of older adults in the City as compared to surrounding jurisdictions, demand for such units from existing City residents could be strong. Housing should be suitable for a range of choices, such as aging in place, accessory dwelling units, dedicated senior housing, and assisted living/nursing care. In addition, options should be available for people with a variety of disabilities and incorporate features of universal design - the design of buildings, products, or environments to make them accessible to all people, regardless of age, disability, or other factors.

OUTCOME H3.1:	A range of accessible housing types with appropriate levels of support and care is available for older adults and persons with disabilities that incorporate the concept of universal design.
ACTION H3.1.1	Express preferences regarding housing units that are appropriate and/or in demand for seniors and those with disabilities and incorporate features of universal design at a range of price points.
ACTION H3.1.2	Encourage development of congregate living facilities - a group of independent dwelling units that have common kitchen and dining areas - to support older adults and persons with disabilities.
ACTION H3.1.3	Review provisions within the City's Zoning Ordinance to identify and amend provisions that impede the ability to construct or modify housing containing minimal physical barriers for people of all ages and abilities, including but not limited to standards of universal design.

Housing
Goal 4

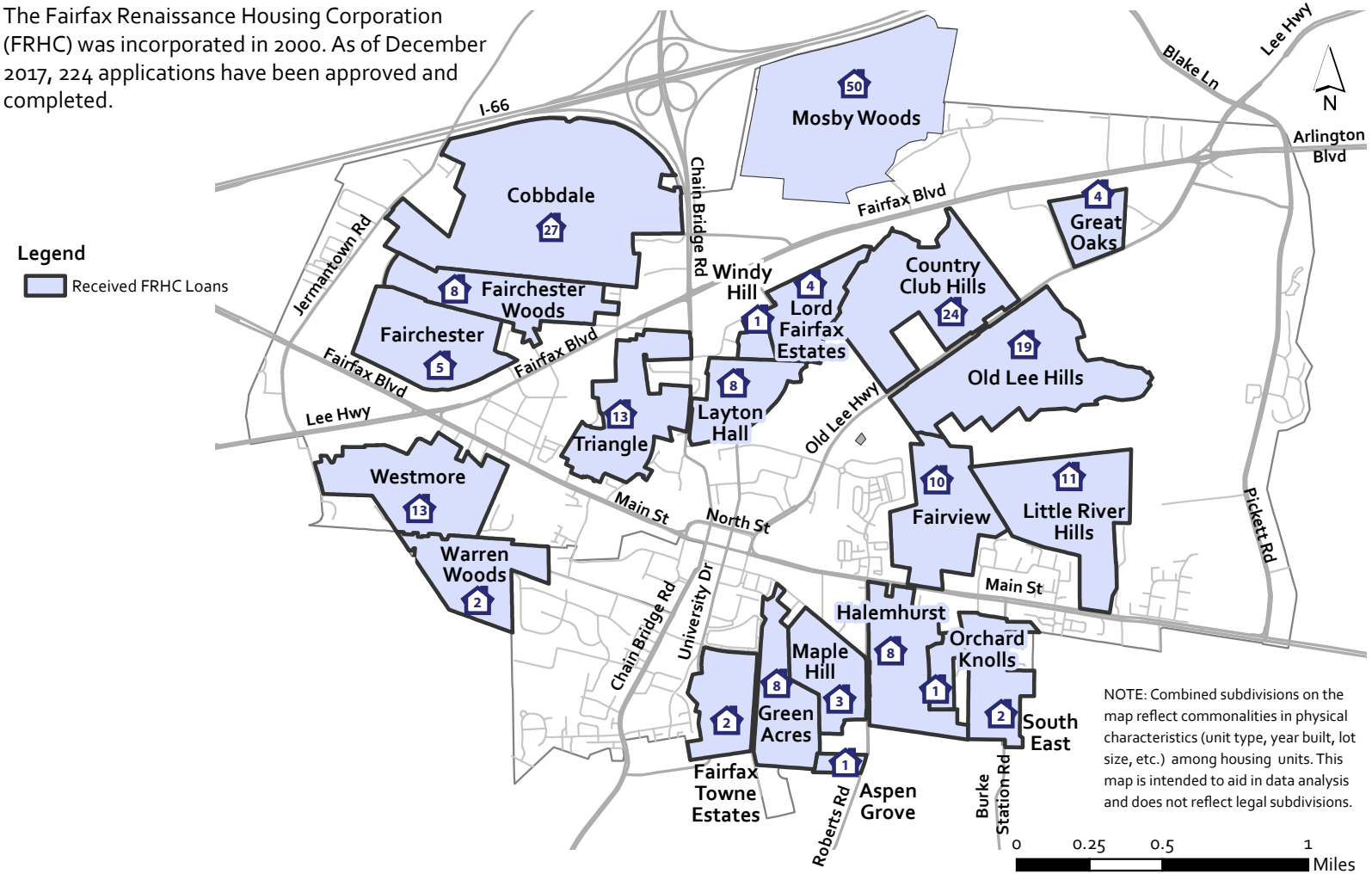
Support residential improvements of existing housing units.

Home renovations and expansions allow existing housing units in the City to keep up with modern expectations, including characteristics such as floor area, layout, style, technological amenities, and sustainable infrastructure. The Fairfax Renaissance Housing Corporation has assisted in such housing improvement projects throughout the City since 2000, as shown in Figure 13. In addition, the City has engaged in other programs, such as Solarize NOVA, to encourage residents to consider sustainable elements in home renovations.

OUTCOME H4.1:	A greater number of renovated housing units.
ACTION H4.1.1	Continue to encourage property owners to undertake residential reinvestment projects that can collectively modernize the City's housing stock.
ACTION H4.1.2	Encourage energy-efficient retrofits that reduce water use and heating and cooling costs.
ACTION H4.1.3	Continue to enforce compliance with building and property maintenance codes to prevent deteriorated, unsafe, and unhealthy housing conditions.
ACTION H4.1.4	Incentivize reinvestment in existing multifamily complexes.
OUTCOME H4.2:	Expanded City-sponsored residential improvement programs.
ACTION H4.2.1	Continue to explore modifications to the FRHC program to encourage greater participation.
ACTION H4.2.2	Encourage further engagement of programs to promote sustainable retrofits and incorporation of sustainable elements in residential renovations.

FIGURE 13 RESIDENTIAL IMPROVEMENT PROJECTS WITH FAIRFAX RENAISSANCE HOUSING CORPORATION (FRHC) LOANS

The Fairfax Renaissance Housing Corporation (FRHC) was incorporated in 2000. As of December 2017, 224 applications have been approved and completed.



Source: Fairfax City GIS Parcels 2017 & FRHC Data January 2018

Community Design and Historic Preservation

Guiding Principle:

In 2035, Fairfax is a city with…
architecture that contributes to a vibrant, creative place and complements our historic character.

An attractive, well-designed City instills civic pride; improves the visual character of the community; creates a strong, positive image; and attracts quality developments. Community Design relates not just to what buildings look like, but to the spaces between buildings, as well as to the street and public realm. While accommodating new growth and change, consideration must be given to preserving significant elements of the community that contribute to the City's unique character.

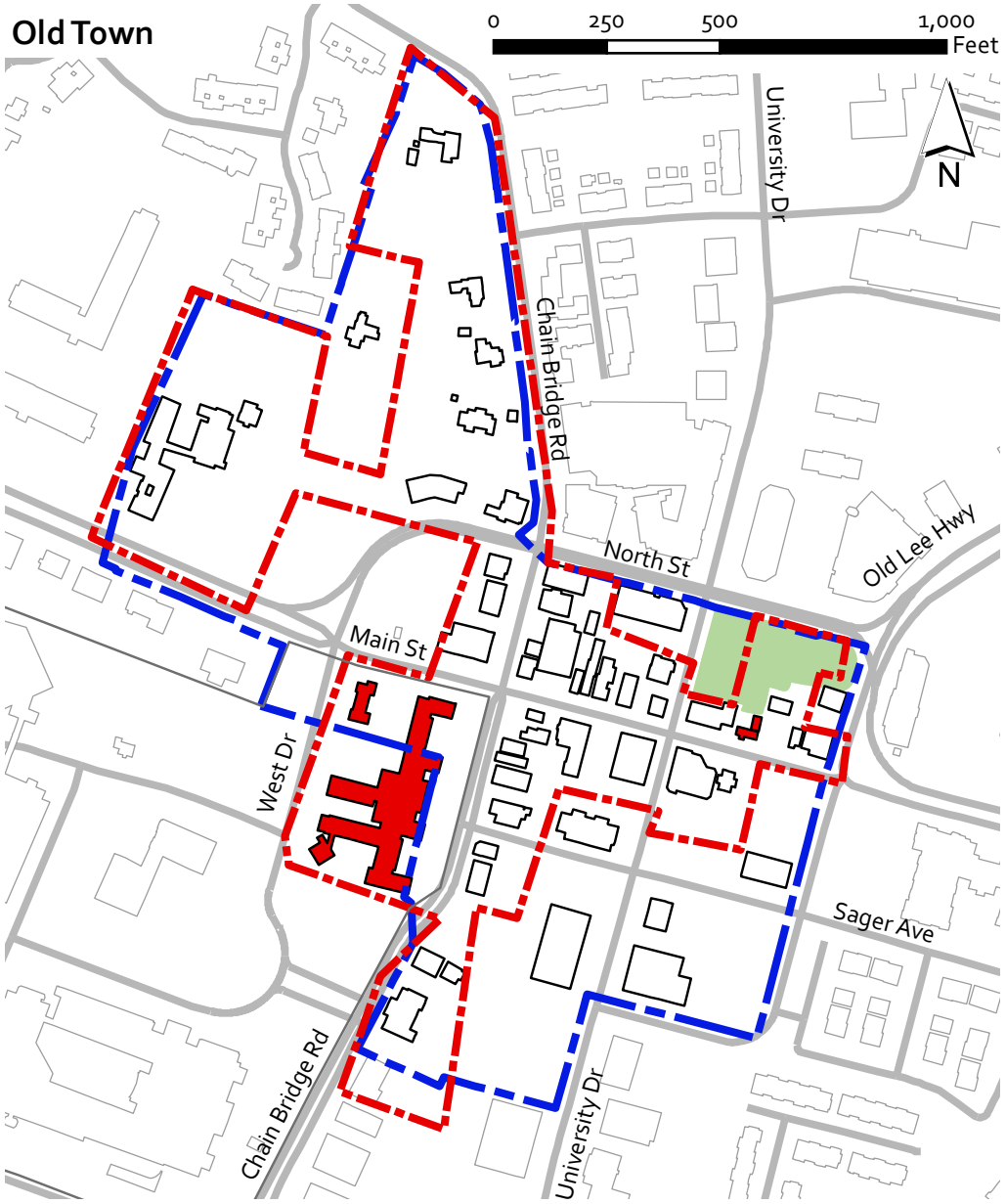
The intent of the Community Design and Historic Preservation Guiding Principle is to capitalize on unique features of the City in a manner reflecting the community's values and its connection to the history and traditions that distinguish it from other communities in the region. This can be accomplished through review and adjustment of planning, regulatory and incentive tools, and by improving coordination among stakeholders who impact the future development of the City, without unreasonably burdening the review process.

The primary resource on design elements for new construction, expansions and renovations is the City of Fairfax Design Guidelines. Separate design characteristics are described in the guidelines for the Old Town Fairfax Historic Overlay District, the Old Town Fairfax Transition Overlay District (both described on the following pages), and the Architectural Control Overlay District (which encompasses all properties within the City except for single-family residential properties and those properties located within one of the other overlay districts). The Board of Architectural Review, along with City staff, reviews development applications to determine if proposals meet the intent of the design guidelines.

Historic Overlay Districts

The majority of the City's historic architectural resources are concentrated in Old Town, the City's traditional core. Old Town is recognized and preserved both nationally as a National Register of Historic Places district as well as through a City preservation district zoning overlay (Figure 14). There are 52 buildings, 10 "other structures," and a monument within the National Register of Historic Places' "City of Fairfax Historic District," many of which are considered "contributing elements." Six of the buildings predate 1850 while others are from the turn of the 20th century to the early 1930s. The City's locally-designated Old Town Fairfax Historic Overlay District is larger in area than the National Register district.

FIGURE 14 HISTORIC DISTRICTS AND BUILDINGS

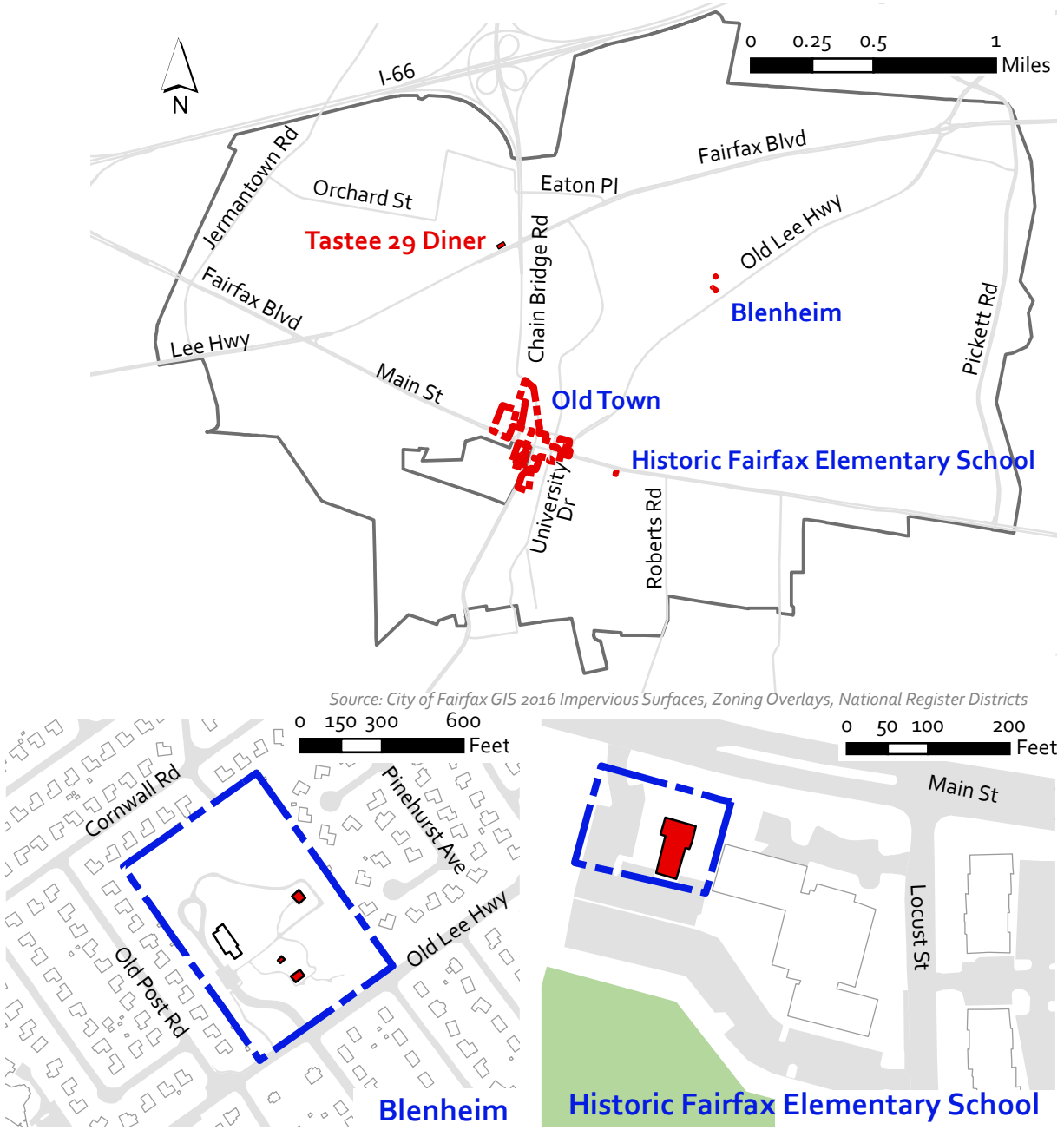


Source: City of Fairfax GIS 2016 Impervious Surfaces, Zoning Overlays, National Register Districts

In addition to Old Town, the City has historic zoning overlay districts for two other properties, the Fairfax Public School and Blenheim (Figure 15).

Additionally, there are many properties and structures with historic characteristics that have not been designated at the local, state, or national levels. Over 4,800 structures in the City are 50 years of age or older, one of the criteria to determine eligibility of historic designation. The significance of a given property or structure to architectural history, landscape history, events or activities in the past, or to lives of important people are other criteria for preservation. Remaining large estates such as the Farr Homeplace and the Sisson House may also be considered for preservation, as well as landforms such the Manassas Gap Railroad Bed.

FIGURE 15 HISTORIC DISTRICTS AND BUILDINGS



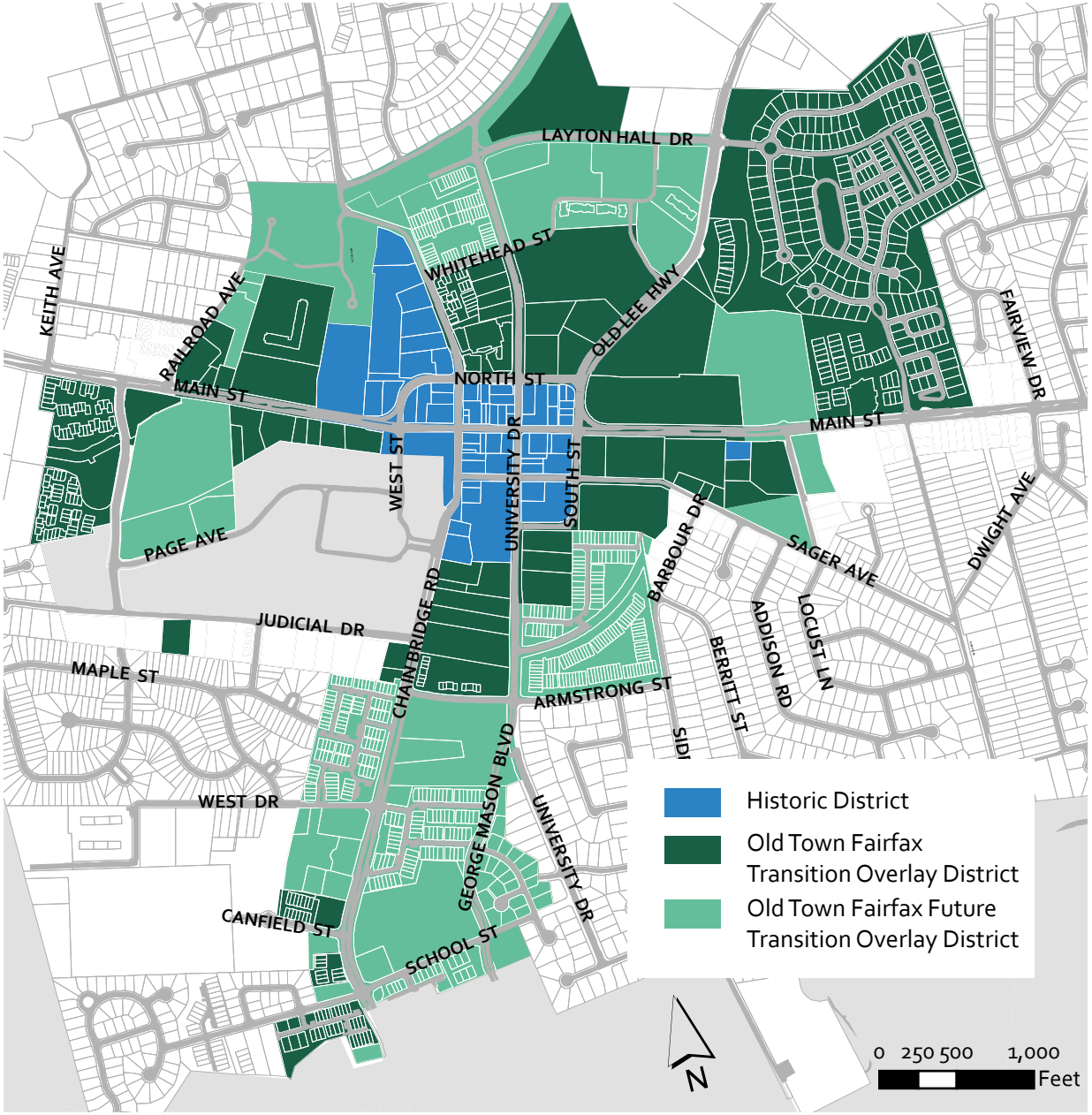
Source: City of Fairfax GIS 2016 Impervious Surfaces, Zoning Overlays, National Register Districts

Old Town Fairfax Transition Overlay District (Transition District)

The Transition District is established in areas surrounding Old Town Fairfax as a means to ensure the character of those areas complements that of the historic districts. This is accomplished through regulations in the Zoning Ordinance limiting the height of new construction, encouraging buildings to be oriented toward the street, and requiring more extensive streetscape improvements than the base standards. The current extent of the Transition District and potential Future Transition Overlay District are provided in Figure 16.

Properties located in the Future Transition Overlay District may be added to the Transition District either upon application from the property owner (typically in conjunction with an individual property rezoning) or as part of a larger City-initiated rezoning. The extent of the potential expansion area for the Transition District stretches farther away from the historic district in order to continue these characteristics along corridors leading into Old Town Fairfax.

FIGURE 16 HISTORIC DISTRICTS AND TRANSITION OVERLAY DISTRICTS



Community Design and Historic Preservation

Goal 1

Require high-quality, sustainable design.

Beyond residential neighborhoods, there is a wide variety of building uses in the City, from office and retail buildings to industrial and institutional buildings. These buildings were constructed over several decades and encompass an array of design styles and architectural influences. The City requires high-quality, sustainable design and construction of new buildings and public spaces along with similarly high-quality modifications and additions to existing buildings and open spaces. The intent of the design review process in areas of the City outside the historic districts is to continue to allow architectural variety while encouraging higher quality materials and design rather than designating specific design styles. The City can further support aesthetic quality through public investment in visible infrastructure, such as streetscapes and signage, and through public-private partnerships to promote desired types of development.

OUTCOME CDHP1.1:	Clear expectations for the required design elements and building materials for the City's historic districts and commercial centers.
ACTION CDHP1.1.1	Determine design aesthetic of Fairfax Boulevard and Main Street with input from City boards and commissions and convey through design documents such as the City of Fairfax Design Guidelines and other documents that may be prepared.
OUTCOME CDHP1.2:	Attractive buildings, inviting public spaces, and welcoming gateways that contribute to our economic vitality and unique character.
ACTION CDHP1.2.1	Identify commercial economic investment areas and provide financial support through the Economic Development Authority.
ACTION CDHP1.2.2	Continue to develop and refine design standards with a menu of options to encourage variety, visual interest, and durability in the design of new development.
ACTION CDHP1.2.3	Explore public-private partnerships to create neighborhood centers inclusive of gathering places.
ACTION CDHP1.2.4	Create attractive gateway features at key City entry points.

Community Design and Historic Preservation

Goal 2

Protect and enhance historic resources.

Inclusion of properties or structures in a local historic district should be based on the criteria described on p. 61. Local protections give the City the ability to designate specific characteristics of a property or district that are intended to be preserved, as well as provide regulatory measures that protect those properties. Local districts can be applied to individual properties or a group of properties, such as a neighborhood. Establishment of any new historic districts should be contingent upon support from owners of the affected properties.

Preservation and appreciation of historic properties and other historic resources in the City can be supported through events and programs that highlight the history of the City and the importance of the historic properties in historic events. City historic resources, such as the Fairfax Museum and Visitor Center, Blenheim Civil War Interpretive Center, and the Ratcliffe-Allison-Pozer House can be utilized to engage the public through special programs, tours, events, exhibitions, and outreach efforts.

OUTCOME CDHP2.1:	Protection of eligible structures, properties, and neighborhoods through local historic designation and strategic investments.
ACTION CDHP2.1.1	Develop an inventory of historic and archaeological resources readily available on the City's website that is reviewed and updated at least every 10 years.
ACTION CDHP2.1.2	Work with neighborhoods to gain support for new locally-designated historic districts and landmarks, where appropriate.
ACTION CDHP2.1.3	Encourage the preservation of existing buildings of historic or architectural significance whenever feasible.
OUTCOME CDHP2.2:	Redevelopment that respects nearby historic structures and the established architectural pattern.
ACTION CDHP2.2.1	Ensure all new development subject to the requirements of the City of Fairfax Design Guidelines is compliant, and continue to monitor the review process for Certificates of Appropriateness to ensure it is effective.
ACTION CDHP2.2.2	Rezone all properties in the Old Town Fairfax Future Transition Overlay District to the Old Town Fairfax Transition Overlay District, either proactively or as each property seeks land use amendments.
OUTCOME CDHP2.3:	The City's historic resources are utilized to provide educational programs to the community and promote preservation of historic properties.
ACTION CDHP2.3.1	Promote greater awareness of the City's historic resources and the history of the City and surrounding area, identifying educational, economic, and recreational benefits of historic structures, properties, and districts.
ACTION CDHP2.3.2	Evaluate the need to expand the Fairfax Museum and Visitor Center, currently located in the Historic Fairfax Elementary School building.

3 Multimodal Transportation

Transportation is about more than mere movement – transportation grants us access to the needs of everyday life. Sustainable, connected, and integrated transportation is fundamental to the success and livability of the City. The intent of the Multimodal Transportation Chapter is to recommend strategies that will improve the operation and safety of the City's transportation system in order to achieve the larger community objectives for a vital, vibrant, and livable City.

This Chapter is based on the Multimodal Transportation Plan, the first comprehensive, multimodal transportation plan completed by the City. ("Multimodal" refers to the multiple ways people use to get around – car, bus, train, bike, walking, etc. – and a multimodal plan incorporates these various transportation modes into an efficient and connected system.) The Multimodal Transportation Plan was developed as a separate effort, but in coordination with the Comprehensive Plan. The four key aspirations shown to the right helped ensure the multimodal aspect of the plan inform many of the recommendations.

Guiding Principle:

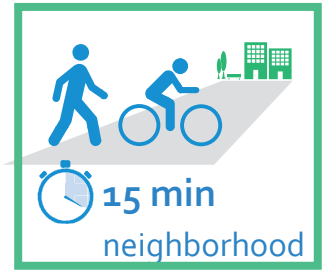
In 2035, Fairfax is a city with…
options for residents to easily, safely, and efficiently move within and between neighborhoods either by walking, bicycling, taking public transportation or driving.

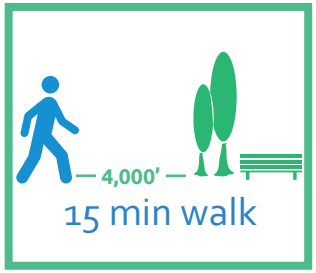
Create a city of **"15-minute neighborhoods"** – ensure that 100% of residents can access a local activity center via a safe 15-minute walk from home (currently 44%).

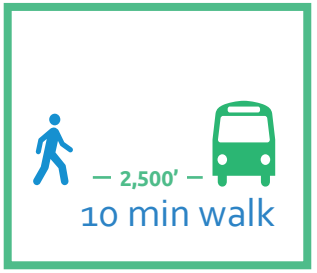
Ensure 100% of residents are connected to green space, trails, or open space via a safe 15-minute walk of home (currently 88%).

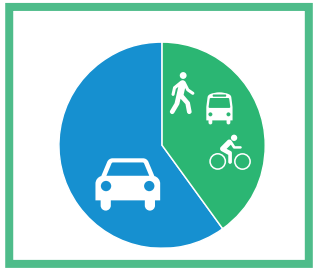
Ensure 100% of residents have access to transit by providing a transit stop within a safe 10-minute walk of each residence (currently 79%).

Increase choice, reliability, and efficiency in travel by achieving at least a 40% non-drive alone mode share for commute to work trips (currently 28%).









Fairfax Transportation Facts

The City of Fairfax is centrally located

A **20-minute** drive to Tysons, Falls Church, and Dulles International Airport

Taking transit to these same destinations can take **three times as long**

27% Of households have at least **one child at home**

36% Of households include at least **one senior**

68,000 Daily trips are made through the city **without stopping**

In 2015, there were

837

Automobile crashes in the city

94% Of city residents have access to **one or more cars**

6% Of city residents must get by without an automobile

72% Of City of Fairfax commuters **drive alone to work**

66% Of residents surveyed would prefer to travel by a means **other than driving alone** to work or errands

Congestion + Safety

are the two most **frequently cited threats** to **livability in the City of Fairfax**

Most transit routes in the city operate from **early morning through evening**

However, most transit routes only operate **once or twice per hour**

1/3 of all household trips

are less than one mile in distance

1/2 Of these short distance trips **are driven**

SOURCE: City of Fairfax Multimodal Transportation Survey, 2015; US Census National Household Travel Survey, 2009; MWCOG; City of Fairfax

Opportunities and Challenges

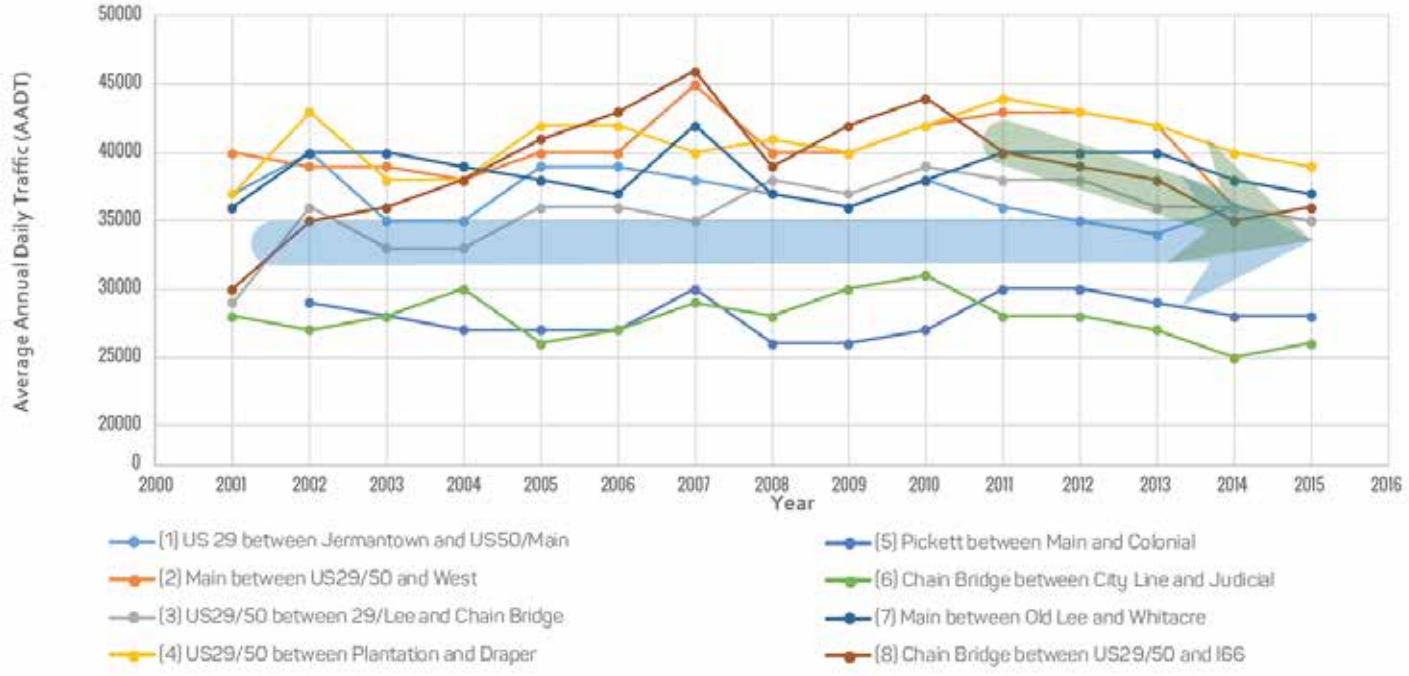
Traffic volumes and peak period congestion

Despite growth in population in the area, daily traffic volumes on the City's 16 miles of arterial roads have remained relatively stable over the past 15 years. However, while traffic volume on several segments has decreased since 2010-2011, vehicular congestion during peak hours continues to present challenges to residents and commuters.

Travel patterns

Currently, the vast majority (72%) of City residents who are employed drive alone to work while 8% carpool, 11% use transit (bus or rail), and 5% work from home. Most households (94%) have at least one automobile. However, 6% of City households make do without owning a personal vehicle. The average City resident who is employed travels 12.6 miles to work — a trip that takes 35 minutes on average. Within the Washington region, approximately one third of all trips are less than a mile, but more than 50% are driven. Many of the short trips in the City could be completed on foot, on transit, or by bike rather than driving.

FIGURE 17 AVERAGE ANNUAL DAILY TRAFFIC

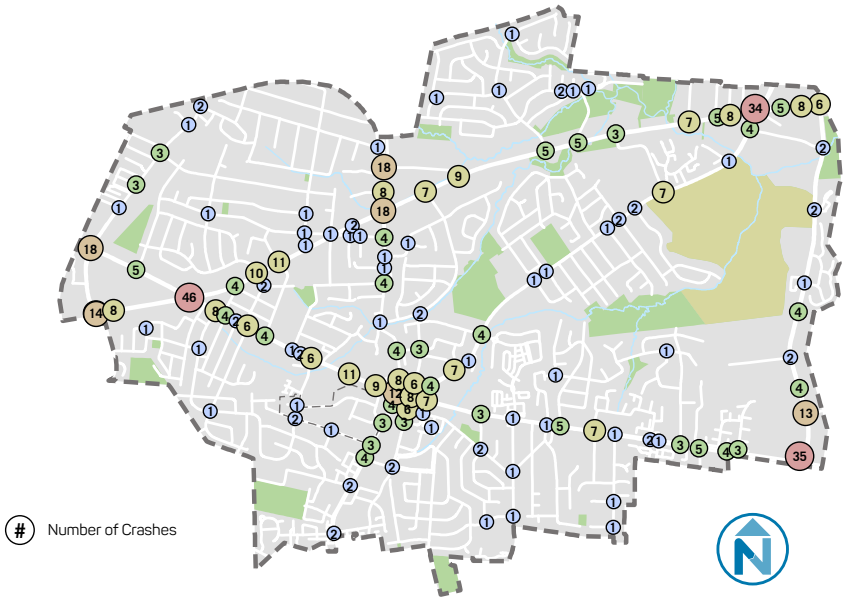


SOURCE: Virginia Department of Transportation, 2001 - 2015

Transportation safety

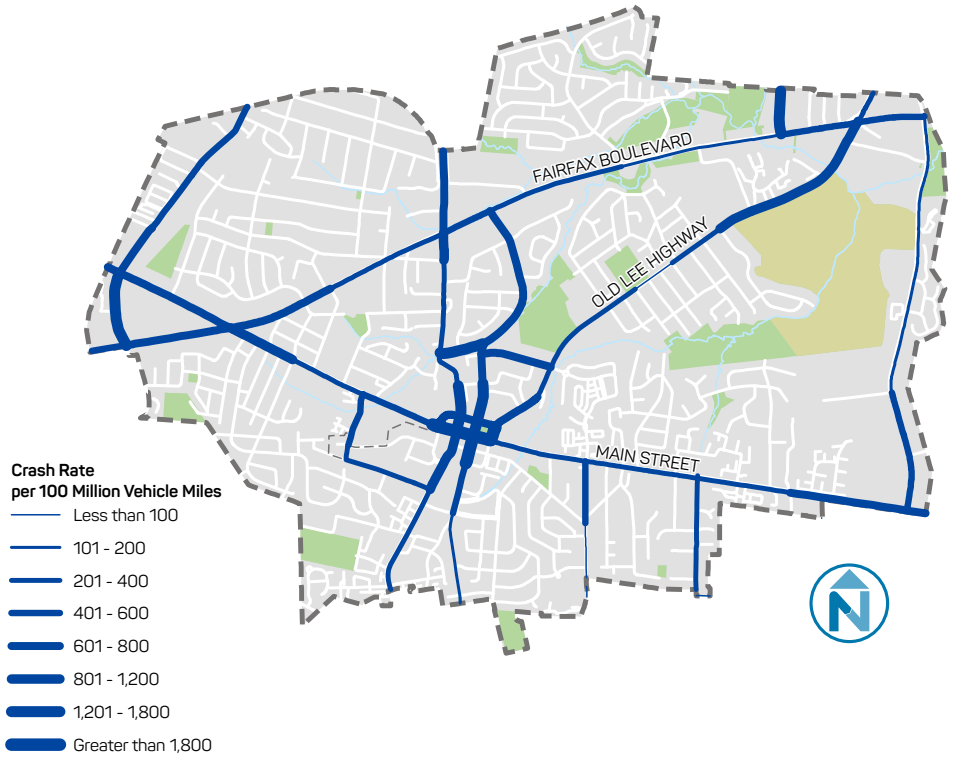
Traffic congestion is significant along most of the major corridors in the City and concentrated where arterials intersect. These areas also experience high rates of vehicle crashes, with the highest rates concentrated at major intersections.

FIGURE 18 2015 VEHICLE CRASHES BY LOCATION



SOURCE: City of Fairfax, 2015

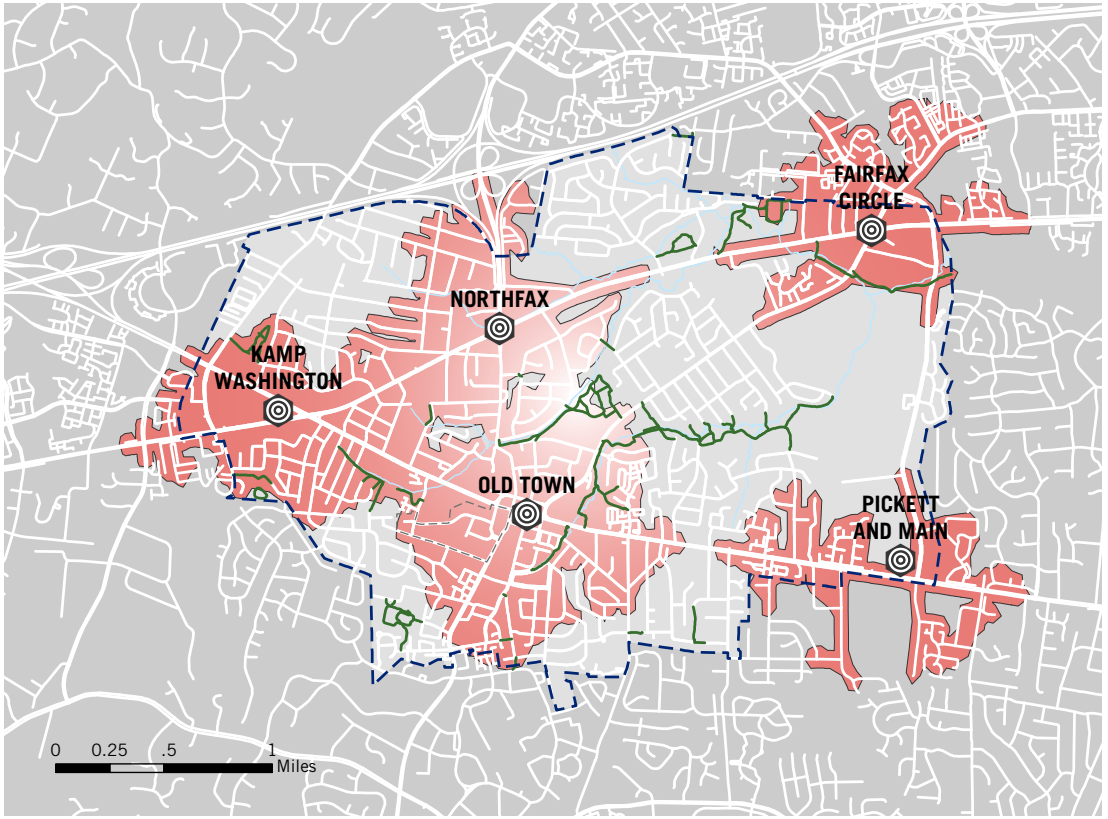
FIGURE 19 2015 VEHICLE CRASH RATES



Pedestrian and bicycle access to amenities

Forty-four percent of City housing units are within a 20-minute walk of basic amenities such as shopping, dining, groceries, open space, schools, and other community facilities. Many of these amenities are concentrated within the City's five Activity Centers. Except for Old Town, these centers are generally separated from adjacent residential communities by larger block sizes, busy roadways, and missing or discontinuous pedestrian networks. High-volume roadways are often dangerous for pedestrians to navigate and complicate access to local amenities. While many neighborhoods have relatively complete sidewalk networks, and while the City has a number of bicycle and pedestrian trails, the bicycle and pedestrian network is not well-connected or accessible for all users.

FIGURE 20 ACTIVITY CENTER WALKSHEDS (15 MINUTES)

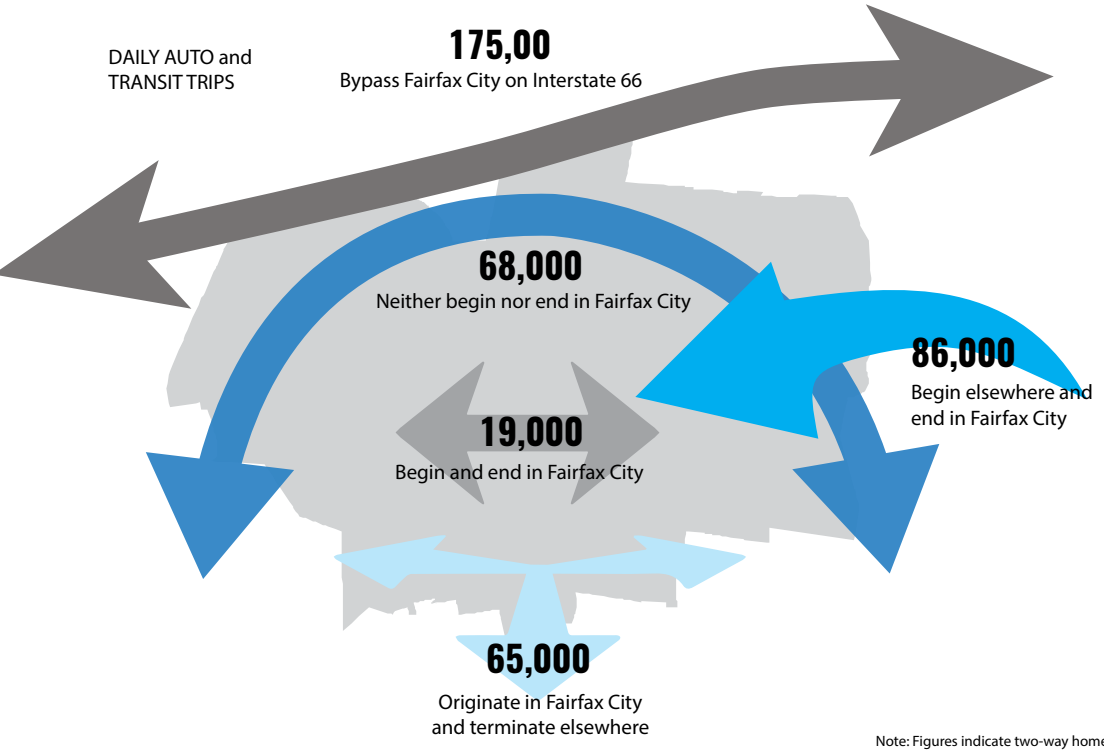


SOURCE: Census Data Set H1, 2010

Regional transportation demand

Every day, 68,000 regional travelers, primarily motorists, travel through the City without making a stop. As traffic congestion continues to increase on major regional corridors such as I-66 and Braddock Road, this regional traffic threatens to similarly increase congestion on City corridors.

FIGURE 21 DAILY TRIPS TO, FROM, AND THROUGH THE CITY



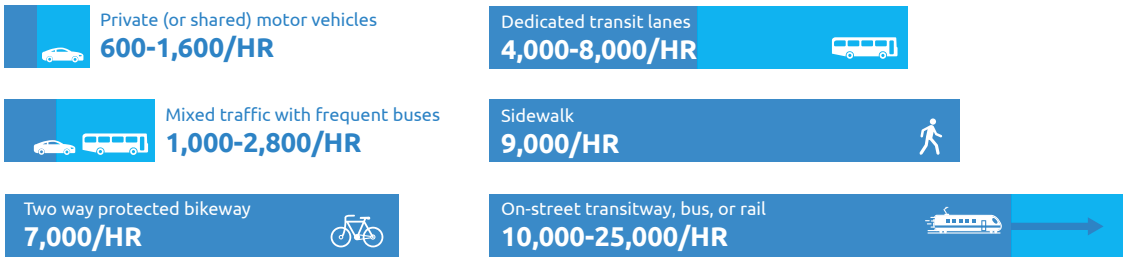
Note: Figures indicate two-way home based work trips and home based non-work trips.

SOURCE: MWCOG 2.3 v57a Model, 2015

Roadway expansion limitations

While the City may continue to add local minor streets to enhance connectivity and access, few opportunities remain to add substantially more vehicle capacity on City streets. As such, the City will need to focus on ways to efficiently move more people within the existing street network. This can be done by encouraging higher occupancy in both private and mass transit vehicles, satisfying more short distance trips with walking and bicycle options, and encouraging people to shift their time of travel away from peak hours to less congested times of the day.

FIGURE 22 PEOPLE MOVING CAPABILITY OF VARIOUS TRANSPORTATION MODES



Street connectivity

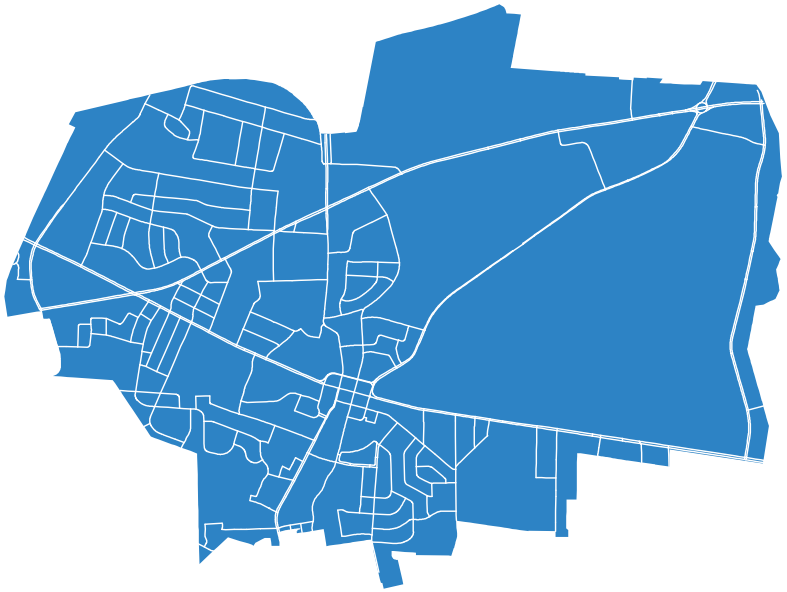
The City has 104 centerline miles of streets. However, only 61% of them can connect users to other parts of the City without depending on major corridors. While limited connectivity discourages through traffic on local streets, it also constrains resident access in and out of their neighborhood. Oftentimes bicycle and pedestrian access is equally constrained, causing further conflict, congestion, and potential safety concerns among all road users.

FIGURE 23 TOTAL AND FUNCTIONAL VEHICULAR NETWORKS

TOTAL STREET GRID

A comparison of the entire City street grid to a functional grid paints a stark picture. The east side of the City consists almost entirely of neighborhoods isolated by physical barriers.

FUNCTIONAL STREET GRID



The functional grid is made up of roads that can be used to travel by vehicle to another neighborhood or part of the City. The west side of the City is far more integrated with Old Town and areas immediately northwest, southwest, and south of City boundaries.

Transportation infrastructure, services, and other assets

Among individuals responding to the 2015 City of Fairfax Multimodal Transportation Survey, about two-thirds of residents who currently drive alone to work expressed a desire to have the option to travel by some other means. Current constraints to non-auto travel include limited transit frequency, missing or discontinuous bicycle and pedestrian networks, and general concerns about safety when traveling by non-auto modes.

TRAILS

The City has a 28 mile trail network that provides safe, attractive, and convenient non-motorized access while concurrently promoting physical health and well-being.

CUE

The CUE bus system is well respected and generally well used, and buses generally operate over 16 hours a day on weekdays (with somewhat shorter hours on weekends). Frequency of service is limited, however. Real-time bus tracking and arrival information helps augment the system's usability. Combining transit applications with multimodal trip planning services provides riders with greater choice and convenience to weigh their travel decisions depending on time, cost, or other considerations.

DEVELOPMENT OPPORTUNITIES

The strong Northern Virginia economy continues to make the City an attractive place to live and invest. Following guidance in the Land Use Chapter of this plan, well-designed, concentrated development in Activity Centers can assist in reducing the growth of traffic and congestion. By locating many origins and destinations within a compact, accessible, and walkable area, more residents can fulfill daily needs without depending on driving. Those who drive may take just one vehicle trip and accomplish a number of other errands on foot within the same area. Urban-style development is better able to support more frequent transit service, benefiting travelers across the area.

Evolving shared mobility and technology options

Shared travel options such as carpooling, ride hailing services, or bicycle sharing systems offer opportunities to meet local travel needs conveniently and cost-effectively while reducing single-occupant vehicle travel. Real-time information, intelligent transportation, and other information and technology innovations can also make travel more efficient. Examples of best practices and future trends are shown in Appendix B. Some of these examples may be appropriate components of a sustainable mobility system in the City.

Multimodal Transportation Goal 1

Connect with the region.

The City is a relatively small jurisdiction within a much larger region. Although regional traffic can congest City streets, City residents rely on the larger region for significant employment, entertainment, and cultural destinations; and City businesses rely on regional patrons and attract employees from the larger area. The City must enhance facilities that connect to the larger region, but do so in a way that supports safety, connection, and robust choices in travel options.

OUTCOME MM1.1:	Corridors for regional travel and better connections to regional networks and destinations are enhanced and improved.
ACTION MM1.1.1	Continue to participate in regional planning efforts to increase connectivity in the regional road, transit, and trail networks.
ACTION MM1.1.2	Collaborate with WMATA and regional partners to support a western extension of Metro's Orange Line, including a station location at I-66 and Route 123 (near Northfax) to benefit City of Fairfax stakeholders with improved access to the Metrorail system.
ACTION MM1.1.3	Increase connectivity to the existing Vienna/Fairfax-GMU Metrorail station including:
1.1.3.1	Improve pedestrian connections from the Fairfax Circle area to the Metro station area.
1.1.3.2	Improve bicycle facility connections and crossings across Fairfax Boulevard from the City to the Metro station.
1.1.3.3	Continue collaboration with George Mason University to enhance bicycle and transit connections between the University and the Metrorail system.
1.1.3.4	Implement the recommendations of the Old Lee Highway "Great Street" conceptual plan.
ACTION MM1.1.4	Expand trail and bicycle networks to connect to regional facilities and destinations, including:
1.1.4.1	Improve connections and logical links to the Cross-County Trail and beyond to the Washington & Old Dominion (W&OD) trail.
1.1.4.2	Improve trail connections south along Route 123 to connect to the Braddock Road Sidepath and on to Lorton.
1.1.4.3	Connect local trails to the planned I-66 trail facility.
1.1.4.4	Coordinate with Fairfax County on the construction of the Main Street/ Little River Turnpike bicycle facility.

Multimodal Transportation Goal 1

Photo Credit: Virginia Department of Transportation

Photo Credit: Ben Schumin

ACTION MM1.1.5	Improve the Blake Lane-Jermantown Road corridor.
1.1.5.1	Complete a transportation study to determine necessary facility improvements and operational plans.
1.1.5.2	Coordinate with Fairfax County and VDOT on improvements to the Jermantown Road bridge over I-66, including additional capacity for vehicles, bicycles, and pedestrians.
1.1.5.3	Pursue a connection from Jermantown Road to Waples Mill Road north of Fairfax Boulevard.
ACTION MM1.1.6	Support Fairfax County in pursuing improvements to Braddock Road to facilitate its operation as a critical regional corridor.
ACTION MM1.1.7	Complete the Government Center Parkway connection.
ACTION MM1.1.8	Improve safety and ensure continued efficiency of Pickett Road as a regional north-south corridor and important truck route.
OUTCOME MM1.2:	Safety and operations in the regional network are improved.
ACTION MM1.2.1	Conduct a detailed study of Fairfax Circle to improve safety and operations, potentially including geometric changes to the existing circle configuration.
ACTION MM1.2.2	Simplify multi-leg and offset intersections, such as the intersection of McLean Avenue, Warwick Avenue, and Fairfax Boulevard.
ACTION MM1.2.3	Address safety and operational deficiencies at major intersections, such as the intersection of Eaton Place and Chain Bridge Road.
ACTION MM1.2.4	Continue City participation on regional transportation boards.
ACTION MM1.2.5	Promote a regional approach to public transportation planning.
ACTION MM1.2.6	Participate in the regional process for evaluation and recommendation of projects to be applied for state and federal funding.

Multimodal Transportation Goal 2

Provide viable and attractive mobility choices.

At present, the City is heavily dominated by vehicle traffic. Many surveyed residents expressed a desire to make the City more walkable and bikeable, but walking or bicycling on busy streets can be uncomfortable or even dangerous. The City's bus system is well-used and highly regarded, but is often caught in the same traffic as other vehicles. Improving mobility requires providing a balanced system where people can choose the best travel option for them depending on their needs.

OUTCOME MM2.1:	Pedestrian safety is improved.
ACTION MM2.1.1	Fill critical gaps in the pedestrian network. Develop and act on a prioritized list of sidewalk improvements in the commercial areas and provide sidewalks on at least one side of every residential street in neighborhoods that are in agreement.
ACTION MM2.1.2	Ensure the pedestrian network is accessible to all and meets the requirements of the Americans with Disabilities Act (ADA).
ACTION MM2.1.3	Enhance safe routes to school, safe routes to transit, and safe routes to community facilities, completing specific planning efforts as required.
ACTION MM2.1.4	Improve pedestrian crosswalks. Crosswalks should be provided across all legs of all intersections.
ACTION MM2.1.5	Expand the sidewalk network. Sidewalks should be provided with any significant street maintenance, rehabilitation, or reconstruction project and may be constructed independent of a street project.
ACTION MM2.1.6	Increase pedestrian connectivity to the existing Vienna/Fairfax-GMU Metro station, such as through the Fairfax Circle area.
ACTION MM2.1.7	Expand safety education efforts to educate all road users on pedestrian awareness and safety. Educate residents on proper procedures for traveling as a pedestrian, interacting with pedestrians as a driver, and locating and using pedestrian facilities to increase comfort and safety and encourage more walking.
OUTCOME MM2.2:	The City's existing trail system, including the "Green Ribbon" parks and trail network, is connected and expanded.
ACTION MM2.2.1	Identify and fill gaps in the trail network. Find opportunities for future trails, complete connections to existing segments, implement projects proposed by the Parks and Recreation Master Plan, and pursue new trail connections to create a more functional trail network.
ACTION MM2.2.2	Connect the George Snyder Trail to the planned I-66 trail facility.
ACTION MM2.2.3	Improve trail crossings across arterial streets, including Fairfax Boulevard at Pickett Road and Main Street at Main Street Square and Railroad Avenue.

Multimodal Transportation Goal 2

ACTION MM2.2.4	Provide wayfinding, trailblazing, traffic calming/safety, and non-motorized facility improvements to provide connections between parks and trails.
ACTION MM2.2.5	Increase resident awareness of trail networks and connections.
OUTCOME MM2.3	Bicycle network, facilities, and programs are improved.
ACTION MM2.3.1	Develop and adopt a bicycle network plan linking major destinations including George Mason University, Old Town, Metrorail, and the regional trail system.
ACTION MM2.3.2	Review bicycle facility design standards to ensure best practices in design and delivery of facilities.
ACTION MM2.3.3	Expand the provision of bicycle racks for short-term bicycle parking.
ACTION MM2.3.4	Adopt bicycle-supportive policies for development projects where applicable, including expanded provision of short- and long-term bicycle parking, showers, and changing facilities.
ACTION MM2.3.5	Complete a bikeshare feasibility study including definition of necessary station density, recommended "starter system," operating and management structure, and funding program, preferably in partnership with George Mason University.
ACTION MM2.3.6	Provide initial support to establish bikeshare in the City.
ACTION MM2.3.7	Expand safety education efforts to educate all road users on bicycle awareness and safety. Educate casual cyclists on proper procedures to encourage more cycling through an increased comfort level.
ACTION MM2.3.8	Increase connectivity to the existing Vienna/Fairfax-GMU Metrorail station by improving bicycle facility connections and crossings across Fairfax Boulevard north to the Metro station.

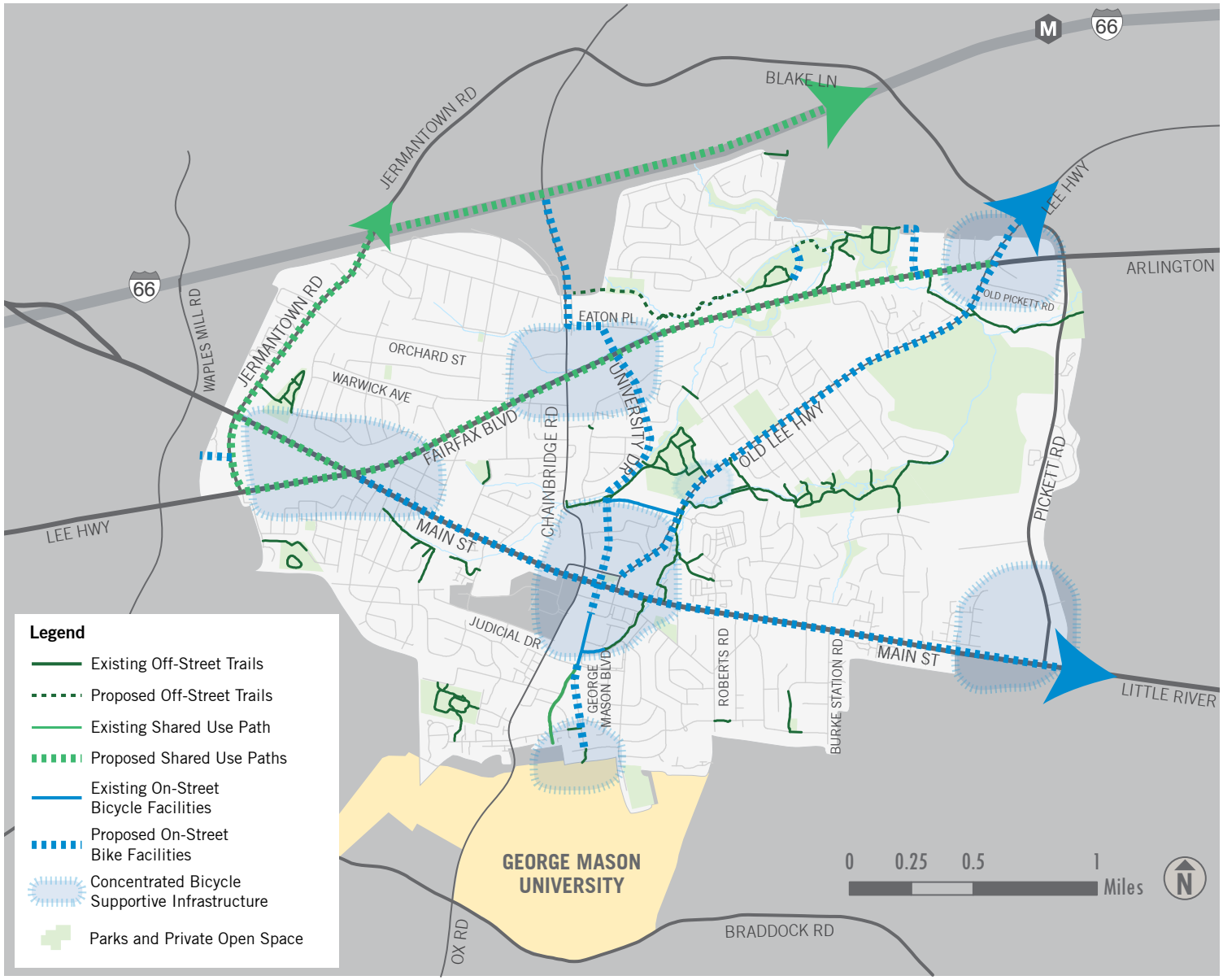
Multimodal Transportation Goal 2

OUTCOME MM2.4	Transit continues to be an effective non-driving alternative.
ACTION MM2.4.1	Improve transit services and facilities.
2.4.1.1	Identify a priority transit network providing enhanced transit operations and more frequent services along key corridors including Main Street, Old Lee Highway, and Fairfax Boulevard.
2.4.1.2	Enhance passenger accommodations to improve comfort and convenience.
2.4.1.3	Improve major transfer locations with quality passenger amenities, expanded information, and improved pedestrian facilities. Significant transfer locations include the Kamp Washington area, Fairfax Circle, Old Town, and Pickett and Main.
2.4.1.4	Implement recommendations of the CUE Transit Development Plan to maintain the highly-valued service of the CUE system.
2.4.1.5	Achieve and maintain 90% on-time performance for the CUE system.
2.4.1.6	Improve connections to other transit routes and facilities through enhancements at significant transfer locations.
2.4.1.7	Promote transit-friendly design features in development projects.
2.4.1.8	Expand ADA-accessible sidewalks and crosswalks serving bus stops.
OUTCOME MM2.5:	Vehicular travel and facilities are effectively managed and maintained.
ACTION MM2.5.1	Design all new facilities and upgrade existing facilities to comply with all federal, state, and local safety standards.
ACTION MM2.5.2	Pursue new technologies that would improve safety on City streets.
ACTION MM2.5.3	Ensure the safety of City streets by incorporating traffic calming measures as needed.
ACTION MM2.5.4	Evaluate opportunities to increase street grid connectivity to distribute traffic and to improve network resiliency. Opportunities for additional connections may be identified at any time but particularly as redevelopment occurs.

FIGURE 24 PROPOSED GREEN RIBBON OF RECREATIONAL TRAILS AND ENVISIONED CONNECTIONS

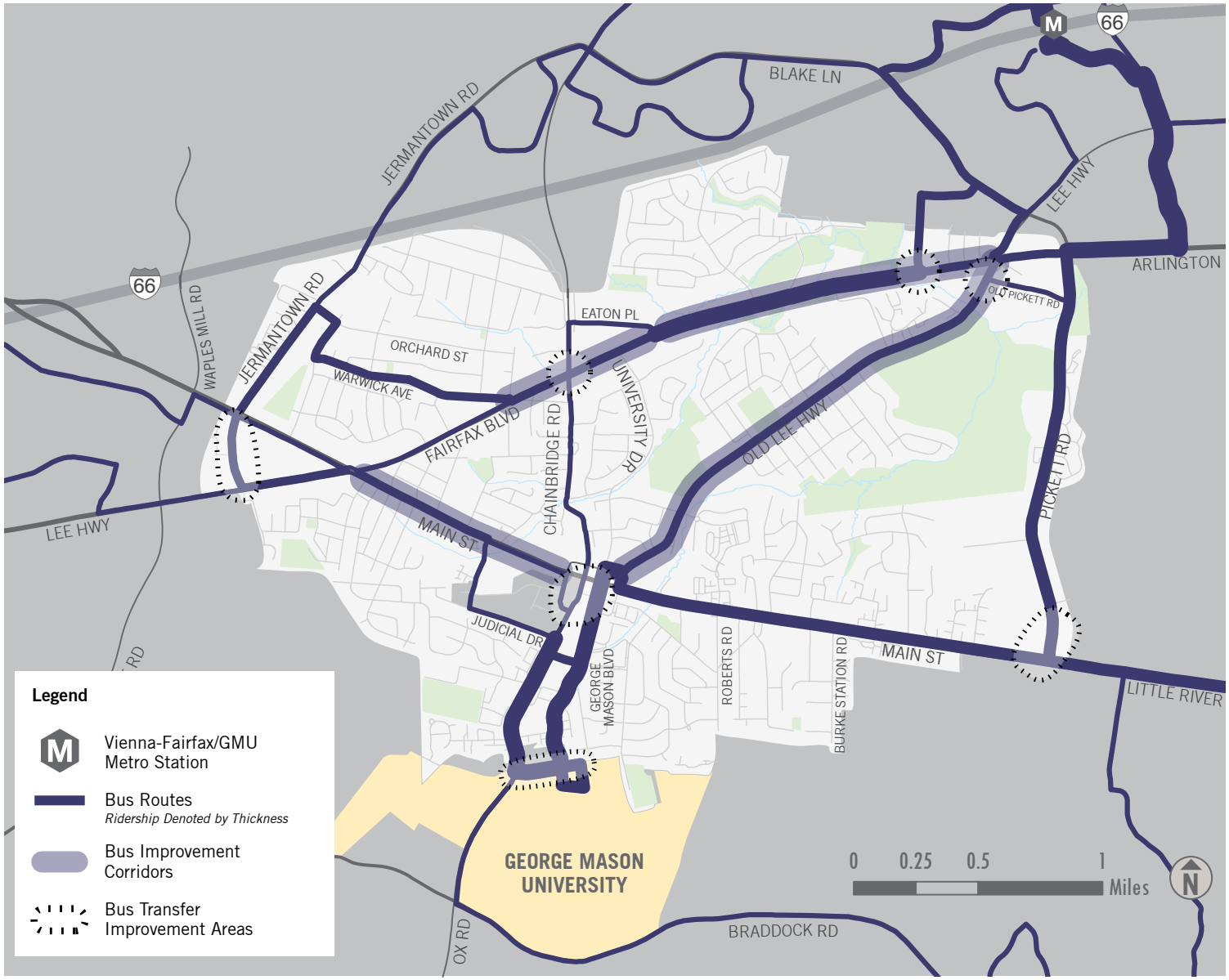
(See Outcome MM2.2)

FIGURE 25 PROPOSED NETWORK FOR BICYCLE TRAVEL



(See Outcome MM2.3)

FIGURE 26 PROPOSED TRANSIT NETWORK ENHANCEMENTS



(See Outcome MM2.4)

Multimodal Transportation Goal 3

Integrate transportation with land use.

Land use and transportation are inextricably linked and must be planned and designed concurrently – the purpose of transportation is to improve access to land use, and development patterns impact the feasibility and attractiveness of mobility choices. Mixing uses in a compact, walkable area – building housing, schools, parks, employment, shops and dining close together – can reduce the need for vehicle trips that contribute to increased congestion and other negative impacts such as eroded air quality and public health. Designing connected street networks increases the accessibility of these areas to surrounding areas. Managing parking and encouraging the use of non-driving modes can further reduce the growth of vehicle traffic while allowing for new development.

OUTCOME MM3.1:	On- and off-street parking and curbside uses are effectively managed.
ACTION MM3.1.1	Effectively locate, design, and manage parking facilities to provide context-appropriate parking availability and accessibility to the surrounding destinations.
ACTION MM3.1.2	Enhance wayfinding and information, with an initial focus on Old Town.
ACTION MM3.1.3	Explore parking pricing and other parking management strategies for public parking spaces and facilities throughout the City.
ACTION MM3.1.4	Explore the creation of parking management districts in Old Town and other Activity Centers to maximize parking resources while minimizing excess parking supply.
ACTION MM3.1.5	Consider policy measures to allow developers to fund public parking or other forms of access infrastructure in lieu of meeting parking requirements on site.
ACTION MM3.1.6	Develop travel marketing material to reduce the demand for long-term commuter/employee parking in the City.
ACTION MM3.1.7	Revise the Residential Parking Permit District Policy to consistently manage on-street public parking in residential neighborhoods.
OUTCOME MM3.2:	Walkability to and within Activity Centers and between neighborhoods is increased.
ACTION MM3.2.1	Whenever possible, increase connections – particularly non-motorized connections – between neighborhoods, community facilities, and Activity Centers.
ACTION MM3.2.2	With development projects, break up large blocks to a more walkable scale. Pursue additional secondary and tertiary street network opportunities. Streets should be well-designed as complete streets and align at regular intersections for a continuous street grid.

Multimodal Transportation Goal 3

The City will improve street design and better guide street management decisions through adoption of a "Link + Place" street typology appropriate to the City's streets and development patterns. The typology provides planners, engineers, and designers with an understanding of the typical and desired users of the street, features to consider for inclusion, and the transportation demands that require accommodation based on the street's size and uses. Link + Place street type designations for all streets in the City are provided in Figure 28, with each street type defined on the following pages.

ACTION MM3.2.3	Increase the number, safety, and frequency of pedestrian crossings, including across major streets. Provide crosswalks at all approaches of all signalized intersections at minimum intervals of 500 feet within Activity Centers. An exception exists in the case where the implementation of a crosswalk would result in operational failure of the corridor.
ACTION MM3.2.4	Improve the overall pedestrian environment, including pedestrian crossings, street trees, and furnishing zones; buffering sidewalk from vehicle travel lanes; improved pedestrian scale lighting; and active ground floor uses along primary street edges.
OUTCOME MM3.3:	Streets are designed to accommodate context and function.
ACTION MM3.3.1	Develop and adopt a "Link + Place" street typology to guide street design and management for public and private streets.
ACTION MM3.3.2	Through community consultation, develop specific design objectives, desired outcomes, and performance metrics for each street type. Link design objectives to the street design and project development process, guidelines, and reference documents.
ACTION MM3.3.3	Ensure quality street design in both the pedestrian zone and travel zone of the street.
ACTION MM3.3.4	Improve access, circulation, walkability, and transportation management in Activity Centers.

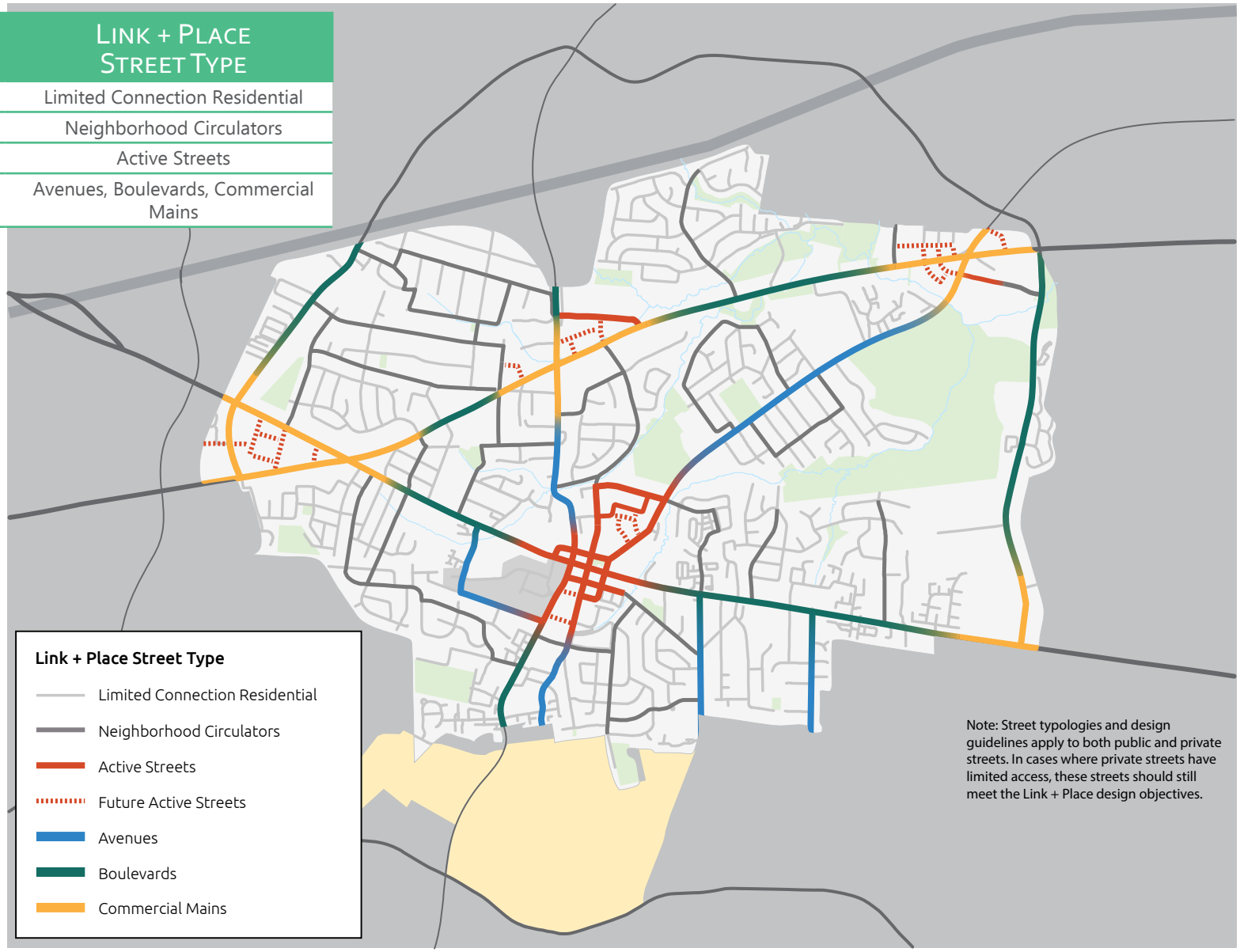
FIGURE 27 PROPOSED ACTIVITY CENTER ENHANCEMENTS

(See Outcome MM3.2)

Note: In June 2020, Small Area Plans were adopted for the Old Town Fairfax and Northfax Activity Centers. Refer to the respective Small Area Plan for specific guidance in each of these Activity Centers.

FIGURE 28 PROPOSED STREET TYPOLOGY DESIGNATIONS

VDOT Classification	Link + Place Street Type
Local	Limited Connection Residential
Minor Collector	Neighborhood Circulators
Major Collector	Active Streets
Minor + Major Arterial	Avenues, Boulevards, Commercial Mains



(See Outcome MM3.23

Note: In June 2020, Small Area Plans were adopted for the Old Town Fairfax and Northfax Activity Centers. Refer to the respective Small Area Plan for specific guidance in each of these Activity Centers.

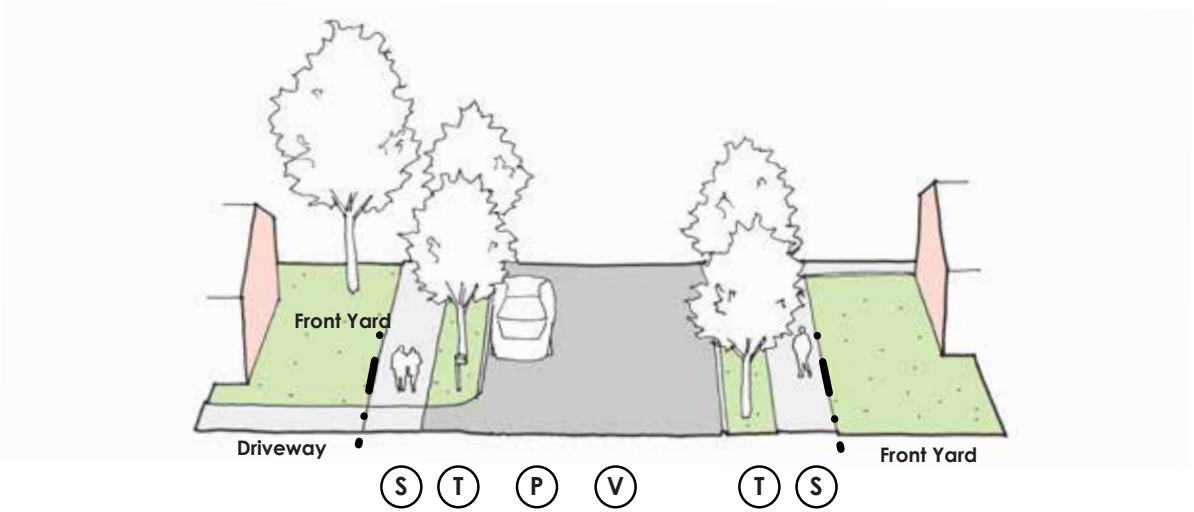
LIMITED CONNECTION RESIDENTIAL STREETS

These are interior neighborhood residential streets that generally do not connect to other streets in the network. These streets are lined with residential front yards and a robust tree canopy, and generally self-regulate both vehicle speeds and volumes.

Typical Transportation Uses

- Local traffic only – typically the home segment of the journey
- Non-motorized trips within the neighborhood
- Bicycles typically share the street with vehicles
- Very low traffic speeds

LIMITED CONNECTION RESIDENTIAL STREETS



TYPICAL ELEMENTS MAY INCLUDE:

- NARROW AND DESIGNED FOR SLOWER SPEEDS
- SINGLE-FAMILY RESIDENTIAL SET BACK WITH DRIVEWAYS
- ON-STREET PARKING (UNMARKED) - WHERE APPLICABLE
- SIDEWALKS

DIAGRAM KEY

- (V) Travel Lanes -10′ to 11′ Each
- (P) On-Street Parking
- (T) Street Tree Zone - 5′
- (S) Sidewalks - 5′
- *i* City Right-of-Way

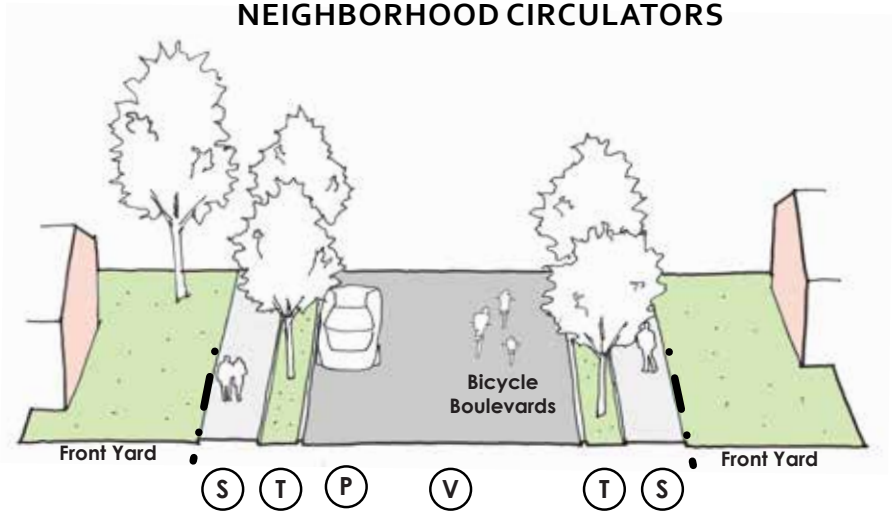
NEIGHBORHOOD CIRCULATORS

Neighborhood Circulators are residential streets that contribute to community connectivity and may include the presence of parks, community centers, schools, or places of worship. Neighborhood Circulators have abundant street trees and open space along them. These streets may need design techniques that reduce travel speeds and traffic volumes.

Typical Transportation Uses

- Mostly local traffic; vehicles from throughout the neighborhood may filter onto these streets
- Some may have transit service
- Non-motorized trips connecting to local destinations (e.g., schools, parks or retail)
- Bicycles typically share the street with vehicles; marked facilities recommended
- Vehicle speeds should be low; speed management may be required

NEIGHBORHOOD CIRCULATORS



Note: Similar to Limited Connection Residential, though provide more connectivity to City street network

TYPICAL ELEMENTS MAY INCLUDE:

- NARROW AND DESIGNED FOR SLOWER SPEEDS
- SINGLE-FAMILY RESIDENTIAL SET BACK WITH DRIVEWAYS
- ON-STREET PARKING (UNMARKED) - WHERE APPLICABLE
- SIDEWALKS
- BICYCLE BOULEVARDS (SEE DEFINITION BELOW)
- STREET LIGHTING

DIAGRAM KEY

- (V) Travel Lanes -10' to 11' Each
- (P) On-Street Parking - 8'
- (T) Street Tree Zone - 5'
- (S) Sidewalks - 5'
- *i* City Right-of-Way

Bicycle Boulevards are streets with low traffic volumes and speeds, designated and designed to give bicycle travel priority within the travel lane.

-National Association of City Transportation Officials

ACTIVE STREETS

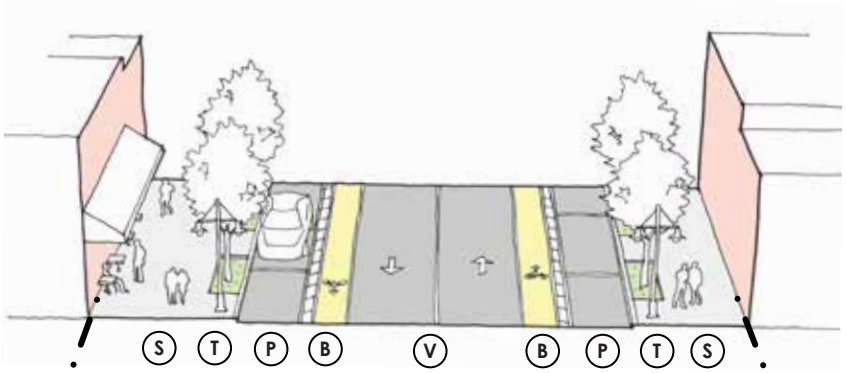
Active Streets connect multiple destinations and are more mixed-use or commercial in nature than residential streets. They are generally the street type for new streets within Activity Centers and are the primary location for commercial property access. Active Streets should be designed to create a comfortable environment for walking while at the same time accommodating circulation by bicyclists, cars, and trucks, and in some cases transit vehicles.

Typical Transportation Uses

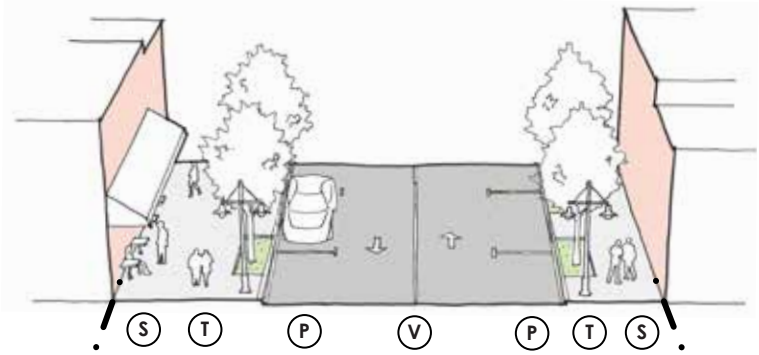
- Mostly local traffic accessing destinations, though some active streets may accommodate regional traffic
- Some may have transit service
- High concentrations of pedestrians
- Bicycles in-street only, preferably on dedicated facilities
- Loading and delivery vehicles need to be accommodated
- Traffic speeds should be low

ACTIVE STREETS

Option 1



Option 2



TYPICAL ELEMENTS MAY INCLUDE:

- NARROW STREETS (TYPICALLY TWO LANES)
- GROUND FLOOR USES ORIENTED TOWARD THE STREET
- ON-STREET PARKING
- SIDEWALKS
- BICYCLE BOULEVARDS
- STREET LIGHTING
- TREES IN PITS, PLANTERS, OR GRATES

DIAGRAM KEY

- (V) Travel Lanes -10′ to 11′ Each
- (P) On-Street Parking - 8′
- (T) Street Tree Zone - Min. 5′
- (S) Sidewalks - Varies 6′ to 12′
- (B) Bicycle Lanes - Min. 5′
- *i* City Right-of-Way

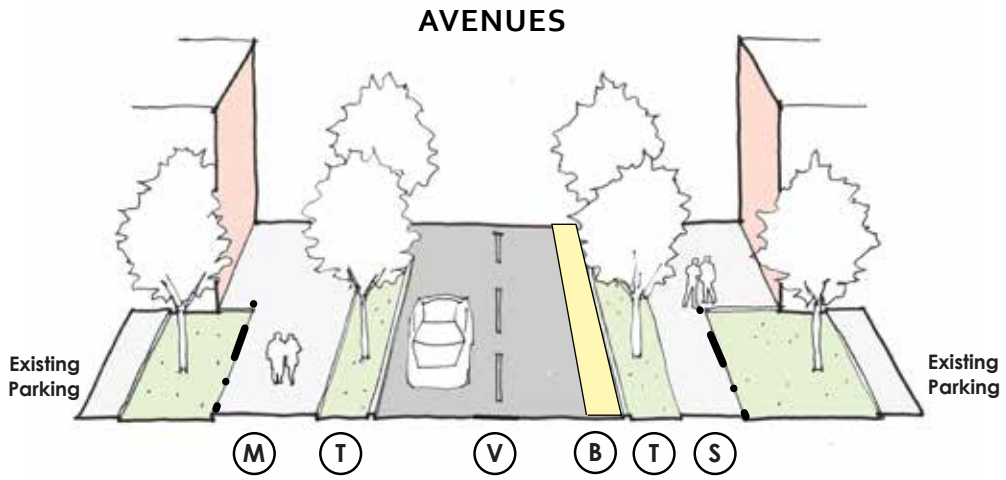
AVENUES

Avenues carry moderate traffic volumes using one travel lane in each direction. As a result, these corridors are more comfortable for transportation users. They include sections of arterial corridors between certain Activity Centers such as Old Lee Highway and Chain Bridge Road. Medians or planted median islands are less common while curb cuts and access drives are numerous. Vehicle throughput can be controlled through these areas due to high volume, naturally lowering traffic speeds to a level consistent with the non-commercial context.

Typical Transportation Uses

- Can be moderate volumes of traffic. Most vehicles are passing through to other local or area destinations
- Transit service is likely
- Moderate concentrations of pedestrians
- Bicycles accommodated on protected or off-street facilities such as shared use paths
- Traffic speeds lower, limited by volume

Image Credit: Google



TYPICAL ELEMENTS MAY INCLUDE:

- LOWER CAPACITY THAN BOULEVARDS (TWO LANES)
- GROUND FLOOR USES ORIENTED TOWARD THE STREET
- LIMITED OR NO ON-STREET PARKING
- SIDEWALKS OR SHARED USE PATHS
- BICYCLE LANES AND/OR SHARED USE PATHS
- VEGETATED BUFFERS FOR TREE ZONE

DIAGRAM KEY

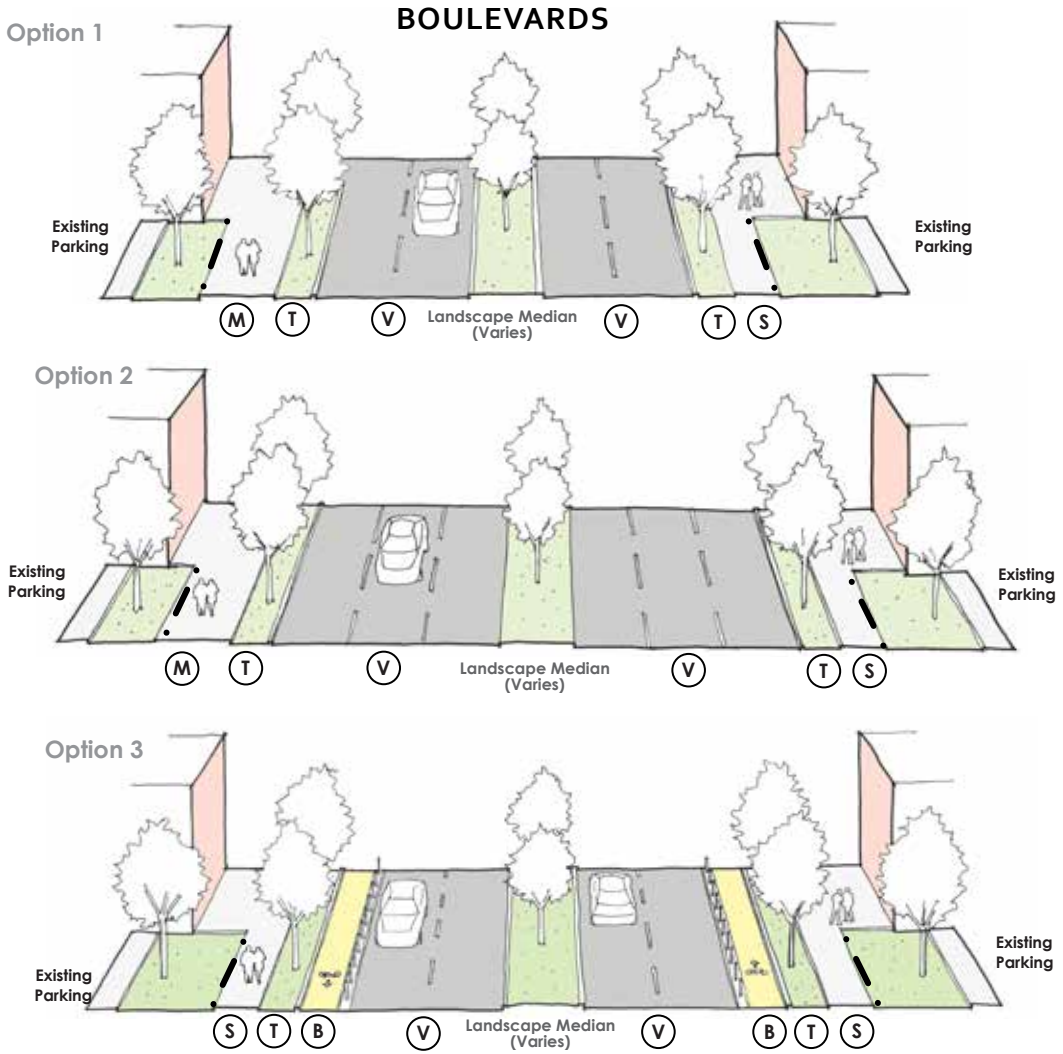
- (V) Travel Lanes -11' to 12' Each
- (T) Street Tree Zone - Min. 5'
- (S) Sidewalks - Varies 6' to 12'
- (M) Shared Use Paths - Min. 10'
- (B) Bicycle Lanes - Min. 5'
- City Right-of-Way

BOULEVARDS

Boulevards carry moderate to high volumes of traffic, but do so through a parkway like setting. They include sections of arterial corridors between the Activity Centers that may be designated as Boulevards, as well as minor arterials such as Pickett Road and Jermantown Road. Medians or planted median islands are common and curb cuts and access drives should be few and far between. While vehicle throughput is generally smooth through these areas, traffic speeds should remain consistent with the residential or park-like setting the streets travel through.

Typical Transportation Uses

- Can be high volumes of traffic. Most vehicles are passing through to other local or area destinations
- Transit service is likely
- Low concentrations of pedestrians
- Bicycles accommodated on protected or off-street facilities such as shared use paths
- Traffic speeds likely higher, but still managed



TYPICAL ELEMENTS MAY INCLUDE:

- MULTI-LANE (TYPICALLY FOUR OR MORE LANES)
- GROUND FLOOR USES ORIENTED TOWARD THE STREET
- NO ON-STREET PARKING
- SIDEWALKS OR SHARED USE PATHS
- BICYCLE LANES OR SHARED USE PATHS
- VEGETATED BUFFERS FOR TREE ZONE

DIAGRAM KEY

- (V) Travel Lanes -11′ to 12′ Each
- (T) Street Tree Zone - Min. 5′
- (S) Sidewalks - Varies 6′ to 12′
- (M) Shared Use Paths - Min. 10′
- (B) Bicycle Lanes - Min. 5′
- / City Right-of-Way

COMMERCIAL MAINS

Commercial Mains are where commercial activity is concentrated, such as Fairfax Boulevard through Northfax or Main Street around Kamp Washington. Commercial Mains feature high volumes of vehicle traffic that mixes with bicycles, transit vehicles, and pedestrian crossings. Streets should be designed to slow traffic speeds while facilitating traffic flow. The pedestrian zone of the street should buffer pedestrians from the adjacent traffic. Access management on Commercial Mains improves vehicle flow while reducing conflicts with pedestrians or bicyclists.

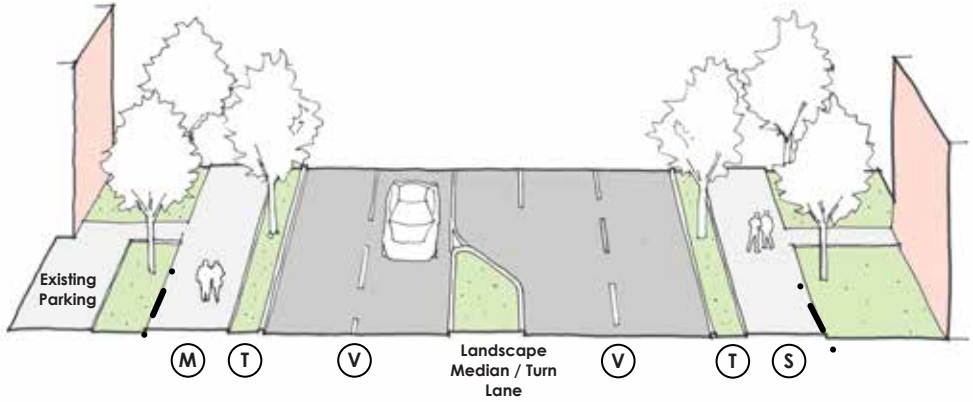
Typical Transportation Uses

- Can be high volumes of traffic. Many vehicles are passing through to other local or regional destinations
- Transit service is likely
- High concentrations of pedestrians
- Bicycles accommodated in dedicated facilities either in-street or in well-designed shared use paths
- Traffic speeds likely higher, but still managed

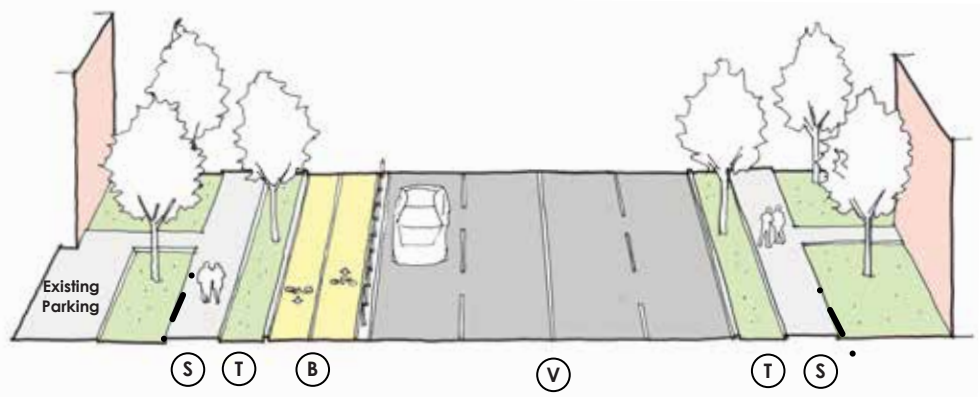
Image Credit: Google

COMMERCIAL MAINS

Option 1



Option 2



TYPICAL ELEMENTS MAY INCLUDE:

- LARGE MULTI-LANE STREETS (TYPICALLY FOUR TO SIX LANES)
- GROUND FLOOR USES ORIENTED TOWARD THE STREET
- NO ON-STREET PARKING
- SIDEWALKS OR SHARED USE PATHS
- BICYCLE LANES OR SHARED USE PATHS
- VEGETATED BUFFERS FOR TREE ZONE

DIAGRAM KEY

- (V) Travel Lanes -11' to 12' Each
- (T) Street Tree Zone - Min. 5'
- (S) Sidewalks - Varies 6' to 12'
- (M) Shared Use Paths - Min. 10'
- (B) Bicycle Lanes - Min. 5'
- City Right-of-Way

Multimodal Transportation Goal 4

Adopt policies and procedures for strategic transportation decision making.

The City will work with civic leaders, community members, and other stakeholders to develop and adopt clear and consistent policies and processes based on the community's fundamental values and advance the overall vision for sustainable transportation. These policies are aimed at ensuring the safety of all travelers, enhancing the person-trip efficiency of the system, and preserving the characteristics that make the City unique.

OUTCOME MM4.1:	The City's sidewalk policy is updated.
ACTION MM4.1.1	Adopt a formal sidewalk policy, beginning with the best practices and policy recommendations for Pedestrian Accessibility Policy in Appendix B (Section 4), requiring sidewalks on all new, reconstructed, or substantially rehabilitated streets that respond to local needs and community context.
OUTCOME MM4.2:	A Complete Streets policy is adopted and implemented.
ACTION MM4.2.1	Develop and adopt a Complete Streets policy, beginning with the best practices and policy recommendations for Complete Streets Policy in Appendix B (Section 5).
4.2.1.1	Develop an appropriate policy for the City and adopt as formal policy.
4.2.1.2	Examine existing design practices and processes and adjust to ensure implementation of the adopted policy.
4.2.1.3	Set and track evaluation measures for Complete Streets improvements.
ACTION MM4.2.2	Implement Complete Streets improvements on major corridors including Fairfax Boulevard, Chain Bridge Road, University Drive, Old Lee Highway and Main Street.
OUTCOME MM4.3:	A Transportation Demand Management (TDM) Program is adopted and implemented.
ACTION MM4.3.1	Based on best practices (as defined in Appendix B Section 3), establish a Citywide TDM policy and program framework that can be utilized by the City and adapted by businesses and developers.
ACTION MM4.3.2	Require TDM for all large development projects. Require bi-annual monitoring to assess resident/employee travel patterns.

Multimodal Transportation Goal 4

ACTION MM4.3.3	Create a City TDM brand and website to centralize all available travel option information including transit schedules, bicycle maps, ridesharing opportunities, and education tools.
ACTION MM4.3.4	Increase outreach and education to George Mason University, the Central Fairfax Chamber of Commerce, City of Fairfax Schools, and other markets that can provide strong partnerships with the TDM program.
ACTION MM4.3.5	Evaluate a linked TDM fund for in-lieu developer fees related to parking requirements to enhance the transit system and Citywide TDM programs.
ACTION MM4.3.6	Improve access to ridesourcing programs through enhanced coordination with Fairfax County RideSource, Commuter Connections, or initiate a City-based program.
ACTION MM4.3.7	Explore opportunities for carshare services within the City to address "last mile" connections.
ACTION MM4.3.8	Partner with employer-sponsored wellness programs to highlight and market travel options and associated costs.
OUTCOME MM4.4:	Mobility best practices and emerging technologies, including those described in Appendix B, are considered in transportation policies and projects.
ACTION MM4.4.1	Consider methods of implementing and evaluating new transportation concepts, including trial or pilot programs.
ACTION MM4.4.2	Provide real-time information through both apps and visual displays for transit arrivals, parking availability, and shared bicycles and vehicles.
ACTION MM4.4.3	Promote multimodal travel planning applications and services.
ACTION MM4.4.4	Pursue Intelligent Transportation Systems (ITS) such as transit or emergency vehicle priority, dynamic signal timing, and other strategies.

Multimodal Transportation Goal 4

ACTION MM4.4.5	Participate with state and regional partners to ensure autonomous vehicle policies protect vulnerable street users and reduce overall vehicle miles traveled.
ACTION MM4.4.6	Consider curbside policies and street design to manage curbside carsharing/ridesourcing activities while preserving the safe and efficient flow of travel.
ACTION MM4.4.7	Consider policies to promote technologies and innovations that reduce environmental impacts from transportation.
OUTCOME MM4.5:	A short-term prioritized transportation project list is developed.
ACTION MM4.5.1	Develop a two-year project list that reflects City Council and community priorities.
ACTION MM4.5.2	Provide opportunities for public input on transportation improvements.
ACTION MM4.5.3	Use all available media to provide transportation information to the public.

Recommended Transportation Policies, And Projects And Cost Estimates

The plan's goals are achieved through accomplishing the policies and projects highlighted in Figure 30. Additionally, in accordance with Virginia Code Section 15.2-2223 relating to Comprehensive Plans, the map is accompanied by cost estimates for the specific projects, as shown below in Figure 29. The map and table include only key recommended projects; all projects under consideration to meet the long-term goals of the Multimodal Plan will be considered annually as part of the development of the City's Two-Year Transportation Program.

FIGURE 29 CITY OF FAIRFAX MULTIMODAL TRANSPORTATION PLAN – COST ESTIMATE

PROJECT #	NAME	PROJECT TOTAL COST ESTIMATE
1	Implement multimodal improvements at Warwick Ave and Fairfax Blvd	$ 7,900,000
2	Improve Jermantown Rd corridor	$ 21,000,000
3	Add sidewalk connection on Chain Bridge Rd between Old Town and Fairfax Blvd	$ 4,580,000
4	Implement Old Lee Hwy multimodal improvements	$ 15,000,000
5	Study Main St bicycle facility feasibility	$ 11,200,000
6	Extend trail along Pickett Rd from Fairfax Blvd to the Cross County Trail	$ 3,500,000
7	Complete the George Snyder Trail	$ 14,000,000
8	Support the study of a Metrorail extension	$ 15,260,000
9	Improve intersection at Eaton Place and Chain Bridge Rd	$ 26,000,000
10	Improve vehicular and pedestrian safety at Fairfax Circle	$ 5,760,000
11	Expand the roadway network in Northfax West	$ 5,000,000
12	Extend South St between University Dr and Chain Bridge Rd	$ 19,750,000
13	Complete the Judicial Drive Trail	$ 350,000
14	Implement University Drive traffic calming measures	$ 500,000
15	Complete the Government Center Parkway connection	$ 5,000,000
Citywide, not location specific	Implement pedestrian spot improvements Citywide	$ 400,000
	Conduct a bikeshare feasibility study	$ 60,000
	Improve Transit facilities	$ 965,000
	Implement roadbed improvements	$ 1,000,000
	Develop a Transportation Demand Management Program	$ 60,000
	Maintain pavement condition of primary extension roadways	$ 970,000
		$ 158,255,000

FIGURE 30 TRANSPORTATION POLICIES AND PROJECTS

Regional Corridors

Continue to participate in regional planning efforts to improve vehicle and freight operations and pedestrian, bicyclist and vehicle safety in regional corridors, such as Blake Lane-Jermantown Road, Braddock Road, Government Center Parkway, and Pickett Road.

City Major Corridors

Implement complete streets improvements to safely accommodate all roadway users in the City on all roads, and in particular on arterials including Fairfax Boulevard, Chain Bridge Road, Old Lee Highway and Main Street.

Local Activity Centers

Within Local Activity Centers:

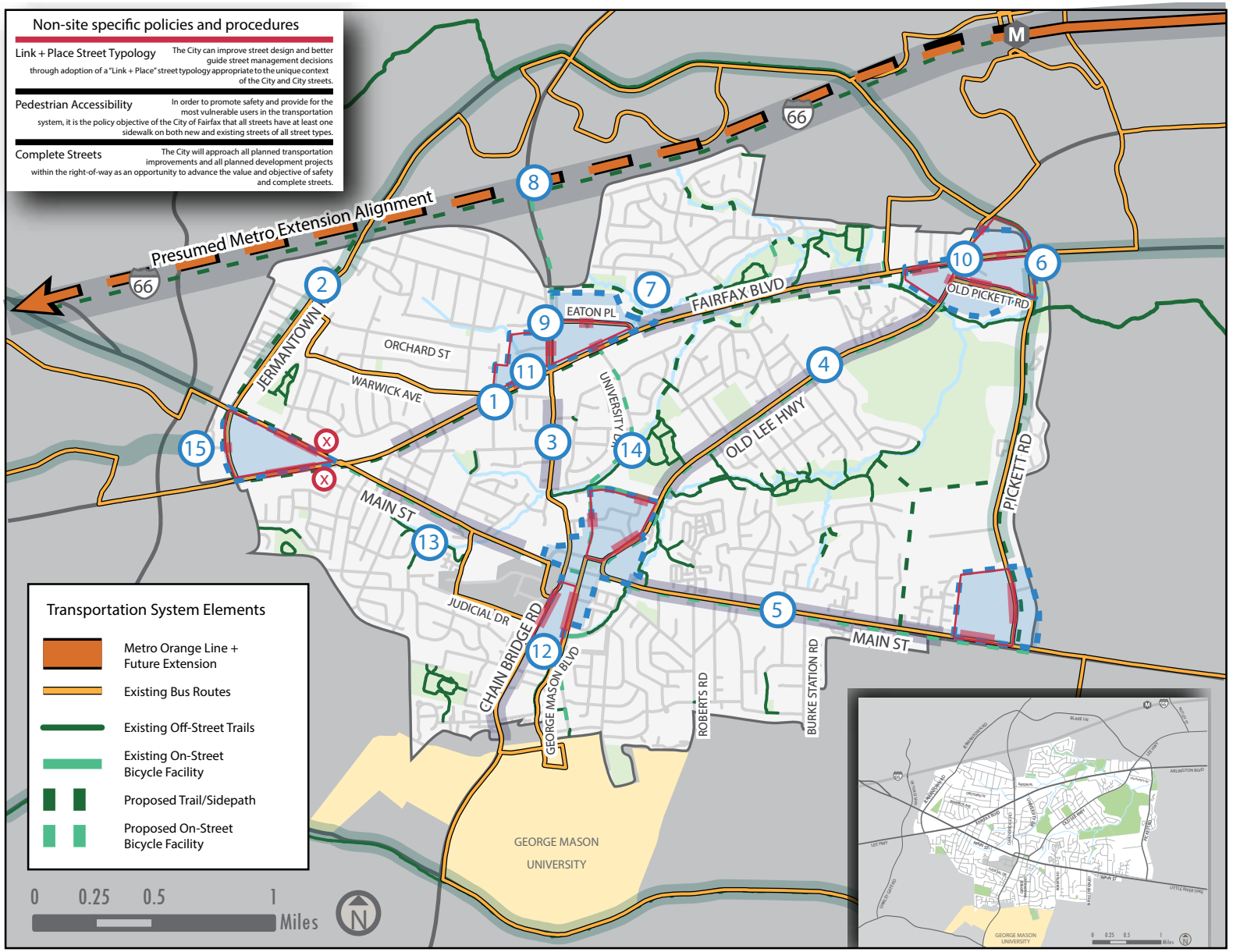
- Break up large blocks to a more walkable scale. Pursue expanded secondary, tertiary, and non-motorized network opportunities.
- Consolidate vehicular access points
- Provide new pedestrian-only connections

Specific Projects

1. Improve Warwick Ave and Fairfax Blvd
2. Improve Jermantown Rd corridor
3. Add sidewalk on Chain Bridge Rd
4. Add Old Lee Hwy multimodal improvements
5. Study Main St bicycle facility feasibility
6. Add Pickett Rd trail connection
7. Complete the George T. Snyder Trail
8. Support the study of a Metrorail extension
9. Improve intersection at Eaton Place and Chain Bridge Rd
10. Improve safety for all users at Fairfax Circle
11. Expand the roadway network in Northfax West
12. Expand the roadway network at South Street
13. Complete the Judicial Drive Trail
14. Implement University Drive traffic calming measures
15. Connect Government Center Parkway

Citywide Projects (Locations TBD)

- Implement pedestrian spot improvements
- Conduct a bikeshare feasibility study
- Improve transit facilities
- Implement roadbed improvements
- Develop a Transportation Demand Management Program
- Maintain pavement condition of primary extension roadways



Note: In June 2020, Small Area Plans were adopted for the Old Town Fairfax and Northfax Activity Centers. Refer to the respective Small Area Plan for specific guidance in each of these Activity Centers.

4 Environment and Sustainability

This Chapter is supported by two Guiding Principles: Natural Environment and Sustainability Initiatives. The Natural Environment Guiding Principle focuses on the physical and geographic context of the City and the impact on local and regional environmental resources. The City has several types of environmental resources that are easily impaired by urban land uses. Encompassing the headwaters of Accotink Creek, measures taken by the City to protect water quality, riparian and floodplain areas, open space, and the urban forest are critical to support regional efforts to improve environmental health. Located within the Chesapeake Bay Watershed, the City is committed to reducing stormwater runoff in order to protect the Bay through the adoption of the Chesapeake Bay Preservation Act (Appendix A) and enforcement of other federal, state, and local stormwater regulations.

The Sustainability Initiatives Guiding Principle focuses on City practices with a more global interest. This includes specific actions that support sustainable practices that can decrease greenhouse gas emissions from both building energy use and transportation; increase energy efficiency; increase utilization of renewable energy; increase waste reduction and recycling; conserve water; and support healthy lifestyles. It is important to recognize that sustainability practices address a broad range of social, economic, and environmental issues, and therefore are incorporated throughout the Comprehensive Plan.

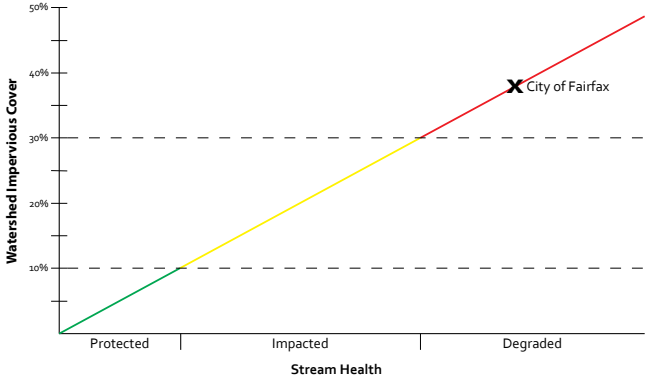
Opportunities and Challenges

Impervious surface

Previous land development has resulted in a large percentage of impervious areas, as shown in Figure 31. Impervious areas have structures such as pavement and buildings that do not allow rainwater to pass through into the ground, and increase the speed and amount of stormwater runoff resulting in negative impacts to streams. As shown in the chart "Relationship Between Stream Quality and Impervious Area," as the percentage of impervious cover in a watershed increases, stream quality declines. At 42.7% impervious cover, the City's streams are classified as "non-supporting streams." Streams in this category are usually so degraded they become a conduit for conveying stormwater and have poor stream quality. As is typical in urban areas, maintaining the health of streams in the City is a continual challenge. The City has an opportunity to increase the amount of pervious areas with redevelopment and to improve the stormwater management system in order to adequately manage stormwater runoff.

FIGURE 31 PERVIOUS AND IMPERVIOUS AREAS

Relationship Between Stream Quality and Impervious Area

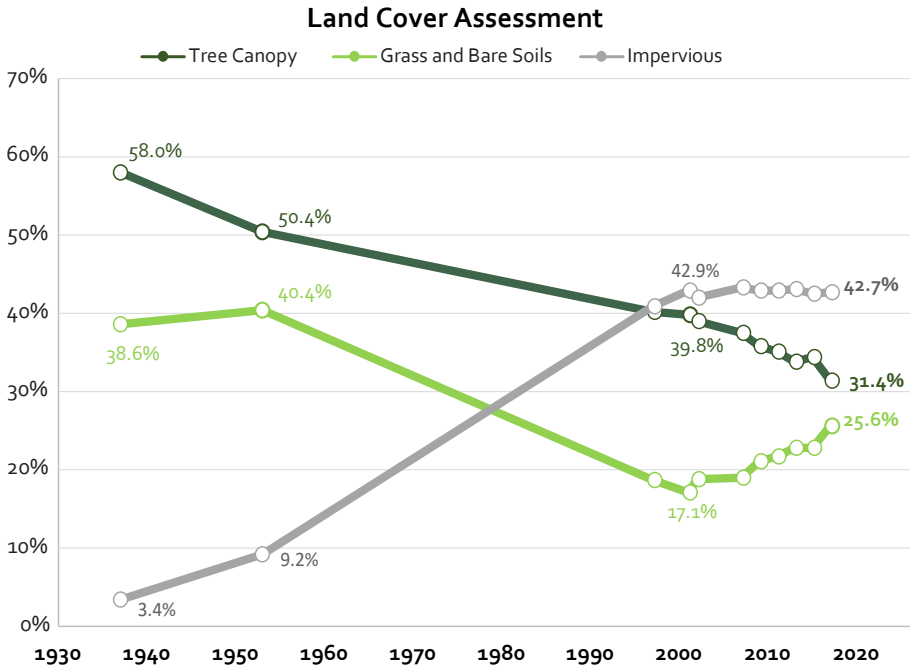


As impervious ground cover increases, stream health and quality declines. With 42.% of its ground area covered by impervious surfaces, the City's streams are considered degraded with poor quality.

Tree cover

Due to urbanization, much of which occurred during rapid post World War II development around Washington, D.C., the City's tree canopy decreased from 58% in 1937 to 31.4% in 2017, while impervious areas have increased from 3.4% to 42.7% as shown in Figure 32. Tree canopy coverage offers many benefits, such as conserving energy due to the reduction of temperatures from shading, improving air quality, reducing stormwater run-off, improving property values, and beautifying our community. Because the City is almost entirely developed, few significant forested areas remain. Those that still exist, whether public or private, deserve specific attention so that their aesthetic and ecological benefits to the City are not lost.

FIGURE 32 TREE CANOPY



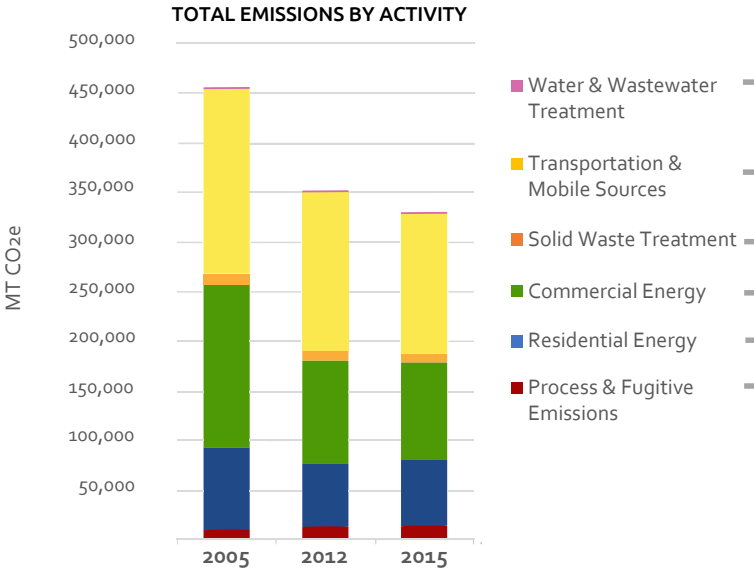
Source: City of Fairfax conducted a tree canopy assessment using the i-Tree Canopy software developed by the US Forest Service. The i-Tree land cover assessment results were estimated using random sampling statistics and have standard deviations ranging from ± .14 to ±1.53.

Source: Individual municipal websites

Greenhouse gas emissions

Scientific consensus accepts the reality of climate change and recognizes that human activity, especially the combustion of fossil fuels that creates greenhouse gases, is an important driver of climate change. The City, along with the entire Mid-Atlantic region, can anticipate changes in temperature, precipitation, water supply, and air quality as a result of the changing climate. Local governments are responding to new demands on infrastructure as well as impacts to natural resources related to weather instability and changing, uncertain climatic conditions. The City is committed to exploring the potential benefits and costs of adopting policies and participating in programs that promote the long-term goal of greenhouse gas emissions reduction while maximizing economic and social benefits. A summary of greenhouse gas emissions from community activities in the City is provided in Figure 33. The City will explore and prioritize strategies that could best aid in reducing greenhouse gas emissions.

FIGURE 33 GREENHOUSE GAS EMISSIONS



Source: Greenhouse Gas Emissions Inventory for the Metropolitan Washington Region (2005-2015): https://www.mwcog.org/documents/2016/04/22/metropolitan-washington-community-wide-greenhouse-gas-emissions-inventory-summary--greenhouse-gas/

Pumping and treatment of water and wastewater used or produced by residents and activities.

On-road vehicular travel, air travel, and commuter rail travel undertaken by residents, business, and visitors in the city, and off -road activities such as use of construction and landscaping equipment.

Photo Credit: Virginia Department of Transportation

Collection and treatment of solid waste produced by residents and activities within city boundaries.

Emissions from electricity consumption, and combustion of natural gas and other fuels from the commercial sector.

Emissions from electricity consumption, and combustion of natural gas and other fuels from the residential sector.

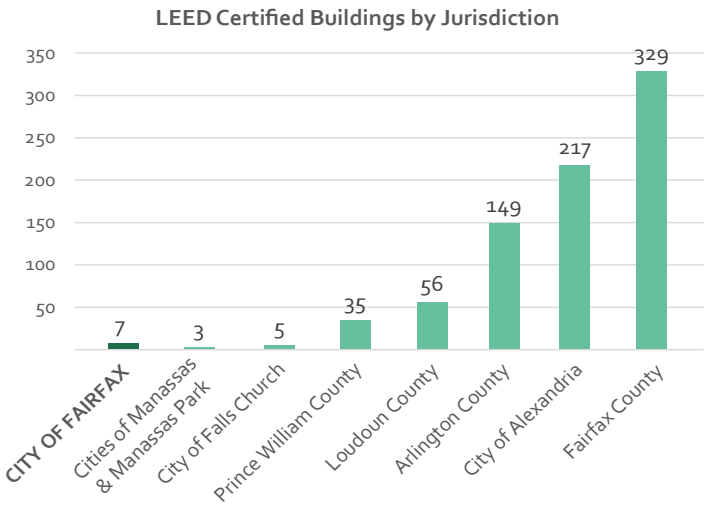
Fugitive emissions from ozone depleting chemicals and natural gas.

Photo Credit: PiccoloNamek

Green building practices

With new public and private development projects, the City has ample opportunity to encourage the use of green building practices (Figure 34). In addition to the environmental benefits of green buildings (e.g., reducing energy use, greenhouse gas emissions, construction waste, etc.), they can also enhance the economics of local development. Recent trends show that office space meeting green building standards generally experiences higher demand and can be a catalyst for bringing new businesses to a community.

FIGURE 34 GREEN BUILDINGS



Fairfax Marketplace

Fair City Mall

Residence Inn

PNC Bank Branch

PROJECT NAME	LOCATION	LEED SYSTEM	POINTS ACHIEVED	CERTIFICATION LEVEL	CERTIFICATION DATE
Fairfax County Health Dept Laboratory	10310 Layton Hall Dr	LEED-NC 2.2	41	Gold	6/8/2011
Barcelo Crestline	3950 University Drive	LEED-CI 2.0	23	Certified	11/5/2010
PNC Bank Branch-Main St & Judicial Ave	10649 Main Street	LEED-NC 2.2	27	Certified	6/28/2013
Fair City Mall	9652 Main St	LEED for Retail (New Construction) Pilot	22	Certified	1/31/2011
Residence Inn	3565 Chain Bridge Road	LEED-NC v2009	42	Certified	6/12/2012
Fairfax Marketplace	10944 Fairfax Boulevard	LEED-EB:OM v2009	40	Certified	4/30/2015
TD Bank - Fairfax Turnpike Shopping Center	Pickett Road and Main Street	LEED-NC Retail v2009	72	Gold	7/25/2012

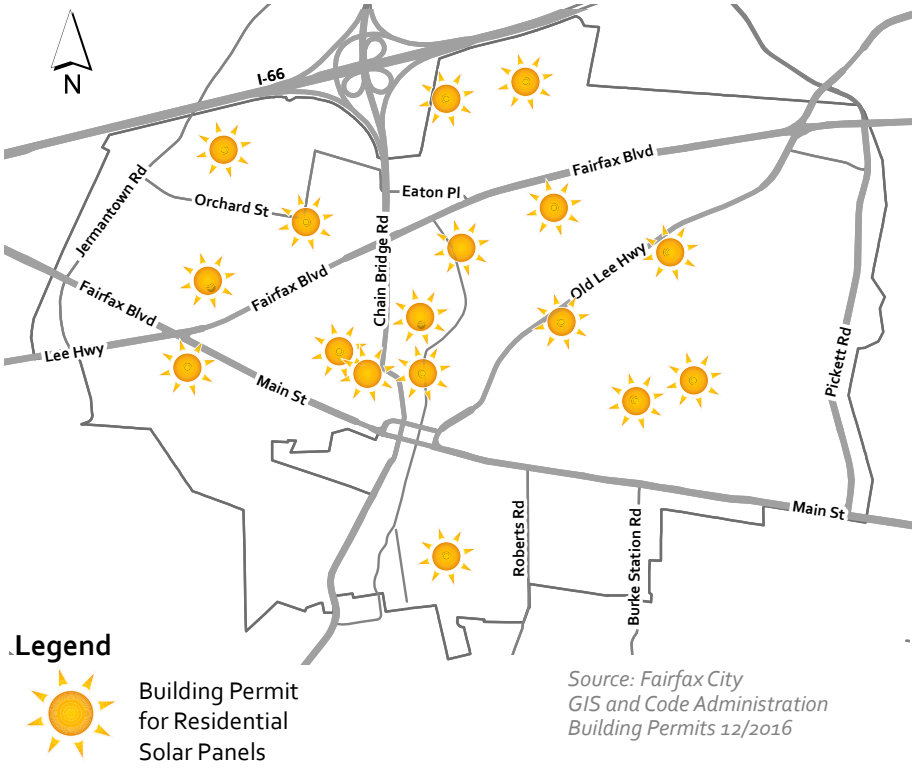
Data Source: The Green Building Information Gateway (GBIG) (http://www.gbig.org/). Data was provided to the City of Fairfax on 10/6/16.

**Data excludes confidential projects and LEED Neighborhood Development (ND) certifications*

Solar installations

In recent years, the City has seen an increase in the number of solar energy installations (Figure 35). Increasing the use of renewable energy sources will benefit the resilience and economic competitiveness of our community. Since 2014, the City has participated in the Solarize NOVA campaign, a yearly effort to encourage incorporation of solar power into individual homes and businesses in Fairfax and several peer jurisdictions. This is accomplished through incentives such as free solar assessments. In 2017, the City received a "Bronze" designation from the national program SolSmart for encouraging solar energy growth and removing obstacles to solar development.

FIGURE 35 BUILDING PERMITS FOR RESIDENTIAL SOLAR PANELS



Source: Fairfax City GIS and Code Administration Building Permits 12/2016

Natural Environment

One of the characteristics of the City that makes it a desirable and healthy place in which to live is the extent, diversity, and quality of its environmental resources. The City's main environmental resources include wetlands, ponds, streams, public parks, open space, and urban forests. As the City continues to grow and redevelop, these resources are at risk of being impaired. Growth and development often cause pollution to the water, air, and soil; degradation to ecosystems; and loss of natural areas that contribute to residents' quality of life. Continuing to preserve and restore our environmental resources ensures a healthy environment by providing access to clean air, clean water, healthy ecosystems, and high quality recreation areas. The City is also at risk from impacts caused by natural and man-made hazards. Reducing threats to the community and environment from these hazards will foster a safer and healthier community.

Guiding Principle:

In 2035, Fairfax is a city with... a healthy ecosystem of naturally flowing streams, native plants, wildlife, contiguous natural habitat areas, and a healthy tree population.

Natural Environment Goal 1

Preserve, promote, and enhance a healthy environment.

The local environment will be preserved and protected through insightful policies and programs that improve the quality of the City's natural resources. Managing the stormwater that runs off land surfaces is a fundamental practice to mitigate the adverse effects of urban development by reducing flow velocities and enhancing water quality. Several federal, state, and local regulations and the City's adoption of the Chesapeake Bay Preservation Ordinance are enacted to protect the region's water resources.

The City has the opportunity to protect and increase the tree canopy by identifying the greatest challenges facing the urban forest (e.g. development, disease, etc.) and developing and implementing an urban forest management plan that includes detailed strategies for attaining a diverse, well-managed urban forest.

OUTCOME NE1.1:	Clean and protected water resources and watersheds in the City.
ACTION NE1.1.1	Reaffirm and implement the City's Chesapeake Bay Preservation Plan (Appendix A) and zoning regulations.
ACTION NE1.1.2	Enhance zoning regulations and support initiatives that encourage the use of green stormwater infrastructure on private and public property.
ACTION NE1.1.3	Retain and acquire riparian areas as open space or parkland.
OUTCOME NE1.2:	Clean, healthy air that supports plant, animal, aquatic, and human life.
ACTION NE1.2.1	Develop and implement a Climate and Energy Action Plan to achieve regional greenhouse gas emissions reduction goals (20% reduction from 2005 level by 2020, 80% reduction from 2005 level by 2050) as committed to in the Greater Washington 2050 Compact.
ACTION NE1.2.2	Identify and implement strategies to reduce airborne pollutants known to cause health problems.
OUTCOME NE1.3:	A diverse, well-managed urban forest dominated by native species.
ACTION NE1.3.1	Develop and implement an urban forest management plan to protect the City's urban forest and increase the quantity, density, and diversity of trees on public and private land.
ACTION NE1.3.2	Support incentives, provide education, and partner with public and private groups to encourage native tree planting and preservation by private property owners.

Natural Environment Goal 1

ACTION NE1.3.3	Update zoning regulations and public facilities manual for tree preservation, removal, and planting of preferred species of trees located along streets, parking lots, and riparian areas.
OUTCOME NE1.4:	A diverse population of native vegetation protected from invasive plants.
ACTION NE1.4.1	Develop a strategy to control invasive species including identifying and mapping areas impacted by invasive plants.
ACTION NE1.4.2	Support the development of community and habitat gardens on underutilized parcels and public lands.
ACTION NE1.4.3	Provide education and partner with public and private groups to promote the preservation and planting of native plants, sustainable landscaping techniques, and management of invasive plants.
OUTCOME NE1.5:	Restored and preserved natural open spaces and contiguous greenway corridors that provide natural habitats for plants and wildlife.
ACTION NE1.5.1	Restore disturbed areas along streams and in conservation easements with native species.
ACTION NE1.5.2	Pursue opportunities to purchase and preserve in perpetuity privately-owned open space.
ACTION NE1.5.3	Encourage new development that protects and preserves environmentally-sensitive areas and natural features, such as tree cover (especially significant stands of trees and healthy, mature trees), native vegetation, streams, wildlife habitat, and natural topography.

Natural Environment Goal 2

Prepare for the impacts from natural and man-made hazards.

Extreme weather events such as prolonged heat, hurricanes, and flash flooding have contributed to negative health impacts, damaged homes and businesses, destroyed critical infrastructure, and to interruptions in the region's economic activity. These types of weather events are projected to increase in frequency and magnitude. There is also a risk that the community could be exposed to a variety of pollutants and hazardous chemicals, which may have negative effects on human health and the environment. The City should take steps to prepare for and mitigate these hazards.

OUTCOME NE2.1:	Reduced risk and improved preparedness to meet the challenges associated with natural and man-made hazards.
ACTION NE2.1.1	Participate in the National Flood Insurance Program's (NFIP) Community Rating System, a voluntary incentive program that recognizes and encourages community floodplain management activities that exceed the minimum NFIP requirements.
ACTION NE2.1.2	Develop a resiliency plan to set priorities and allocate resources to manage risks associated with natural and man-made hazards.
ACTION NE2.1.3	Continue to work with the Northern Virginia Hazard Mitigation Advisory Committee to regularly update the Northern Virginia Hazard Mitigation Plan.
OUTCOME NE2.2:	Reduced exposure to pollutants and hazardous chemicals in the environment.
ACTION NE2.2.1	Enhance exterior lighting standards and pursue certification as an International Dark Sky Community to reduce light pollution and protect nighttime skies.
ACTION NE2.2.2	Continue to enforce noise standards.
ACTION NE2.2.3	Promote the proper disposal or recycling of household hazardous waste.
ACTION NE2.2.4	Educate on the identification, risks, and remediation of hazardous materials in buildings, including but not limited to radon, asbestos and volatile organic compounds.
ACTION NE2.2.5	Develop integrated pest management and nutrient management plans.
ACTION NE2.2.6	Promote the responsible use of pesticides and fertilizers.

Sustainability Initiatives

Guiding Principle:

In 2035, Fairfax is a city with... sustainable practices that preserve, conserve, reuse and recycle resources.

Sustainability can be defined in many ways. In relation to urban planning, sustainability is often defined as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (World Commission on Environment and Development, 1987). The City has a responsibility to future generations to develop sustainably. In 2013, the City executed an energy performance contract to implement energy retrofits at fourteen City-owned buildings. The City pays back the upfront costs of the retrofits using the annual energy cost savings over time.

Sustainability issues extend well beyond City boundaries, so local decisions can impact the region and beyond. The City collaborates with regional partners, such as MWCOG and the Northern Virginia Regional Commission (NVRC) in formulating solutions to sustainability challenges and taking actions to achieve regional goals. In 2010, the Mayor and City Council adopted a resolution endorsing the voluntary Greater Washington 2050 Compact in which the City committed to following the principles and goals set within The Region Forward report, a vision for a more accessible, sustainable, prosperous, and livable metropolitan Washington.

Sustainability Initiatives
Goal 1

Increase the use of sustainable practices, technology, design, and materials.

This City should seize the opportunity to promote energy efficient and sustainable redevelopments and retrofits of aging buildings while also encouraging designs that fit within the context of the existing community. This can involve incentives for privately-owned buildings as well as City investment in public facilities. Education about financing options (such as the Fairfax Renaissance Housing Corporation loans) should be provided to property owners. By improving energy efficiency and sustainable design of civic operations and in the greater community, the City will harmonize resources, investments and technology, help reduce utility costs, support "green collar" jobs, and institutionalize change.

OUTCOME SI1.1:	Minimized energy demand with the application of energy efficient design features, technologies, and best practices.
ACTION SI1.1.1	Promote the efficient use of energy by residents, business owners and government facilities and operations to achieve a 30% reduction in energy use from 2018 baseline levels by 2035; a 40% reduction from 2018 baseline levels by 2040; and a 55% reduction from 2018 baseline levels by 2050.
SI1.1.1.1	Use a data-driven assessment process to deploy energy efficiency technologies throughout all government facilities and operations, and promote energy efficiency best practices among government employees.
SI1.1.1.2	Support incentives, provide education, and partner with public and private groups to promote energy efficiency and sustainability improvements by private property owners.
SI1.1.1.3	Promote voluntary benchmarking for commercial buildings.
SI1.1.1.4	Implement programs that offer clean energy financing solutions for residential and commercial sectors, such as the Solarize NOVA campaign, Property Assessed Clean Energy (PACE) program, and Fairfax Renaissance Housing Corporation (FRHC) Loans.
ACTION SI1.1.2	Develop a green building policy that establishes green building standards and incentives for both private and public sector construction and major renovations.
OUTCOME SI1.2:	Increased use of renewable energy sources and advanced sustainable technologies.
ACTION SI1.2.1	Conduct feasibility studies and subsequent plans for government operations to achieve 100% renewable electricity by 2035 and community-wide 100% renewable electricity by 2050.
ACTION SI1.2.2	Revise applicable codes, zoning regulations, policies, and design guidelines to help facilitate local renewable energy deployment and adoption of sustainable technologies.
ACTION SI1.2.3	Provide education and incentives for residents and businesses to install renewable energy systems and sustainable technologies.
ACTION SI1.2.4	Partner with other local governments, organizations, and individuals on renewable energy planning and implementation.

Sustainability Initiatives Goal 1

OUTCOME SI1.3:	Reduced waste and increased reuse and recycling of materials.
ACTION SI1.3.1	Implement the Solid Waste Management Plan, which establishes waste reduction goals and outlines how the City manages solid waste and recycling.
OUTCOME SI1.4:	Minimized potable water demand in the community.
ACTION SI1.4.1	Develop and provide water conservation education and incentive programs for residents and businesses to promote the use of water efficient practices and products.
ACTION SI1.4.2	Support incentives and revise applicable codes, policies, and design guidelines to encourage water efficiency in new construction and landscaping.

Sustainability Initiatives

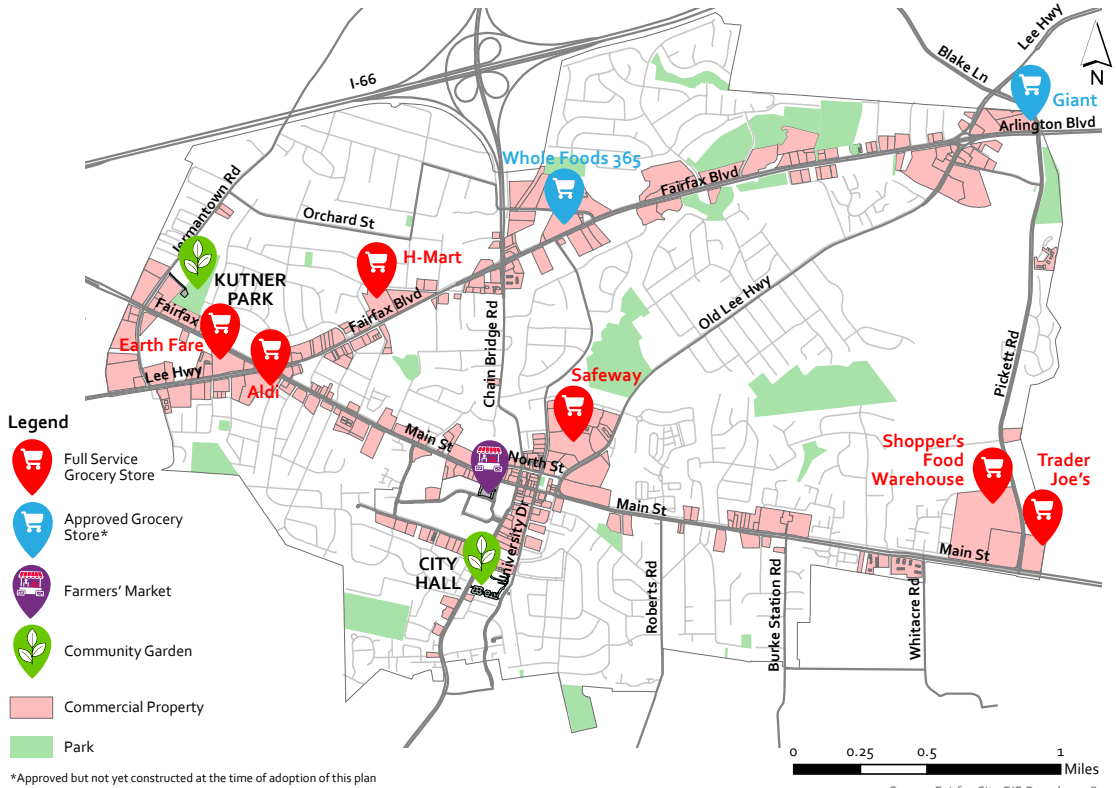
Goal 2

Support physical activity and healthy lifestyles.

Since the City is mostly built out and infrastructure is already in place, it is an ideal location to provide access to healthy food, community facilities, and recreational opportunities. Smart growth concepts should be incorporated in new development and redevelopment to further enhance the ability of residents to take advantage of public transportation, parks, open space, and trails. The City also strives to improve access to healthy, affordable, and regionally-grown foods to promote public health, reduce environmental impacts, and support economic development (Figure 36).

OUTCOME SI2.1:	Access to healthy, regionally-grown foods.
ACTION SI2.1.1	Evaluate regulations that permit urban agriculture on publicly-owned property and/or space for community gardens in new multifamily and mixed-use developments.
ACTION SI2.1.2	Work with Fairfax County to develop a healthy food access plan.
OUTCOME SI2.2:	Access to parks, recreation, community facilities, trails, and open space.
ACTION SI2.2.1	Promote walking and trail use as part of a healthy community initiative.
ACTION SI2.2.2	Partner with Fairfax County and NOVA Parks to improve and expand the local and regional park system.

FIGURE 36 FULL SERVICE GROCERY STORES, FARMERS MARKETS AND COMMUNITY GARDENS



5 Economic Vitality

Guiding Principle:

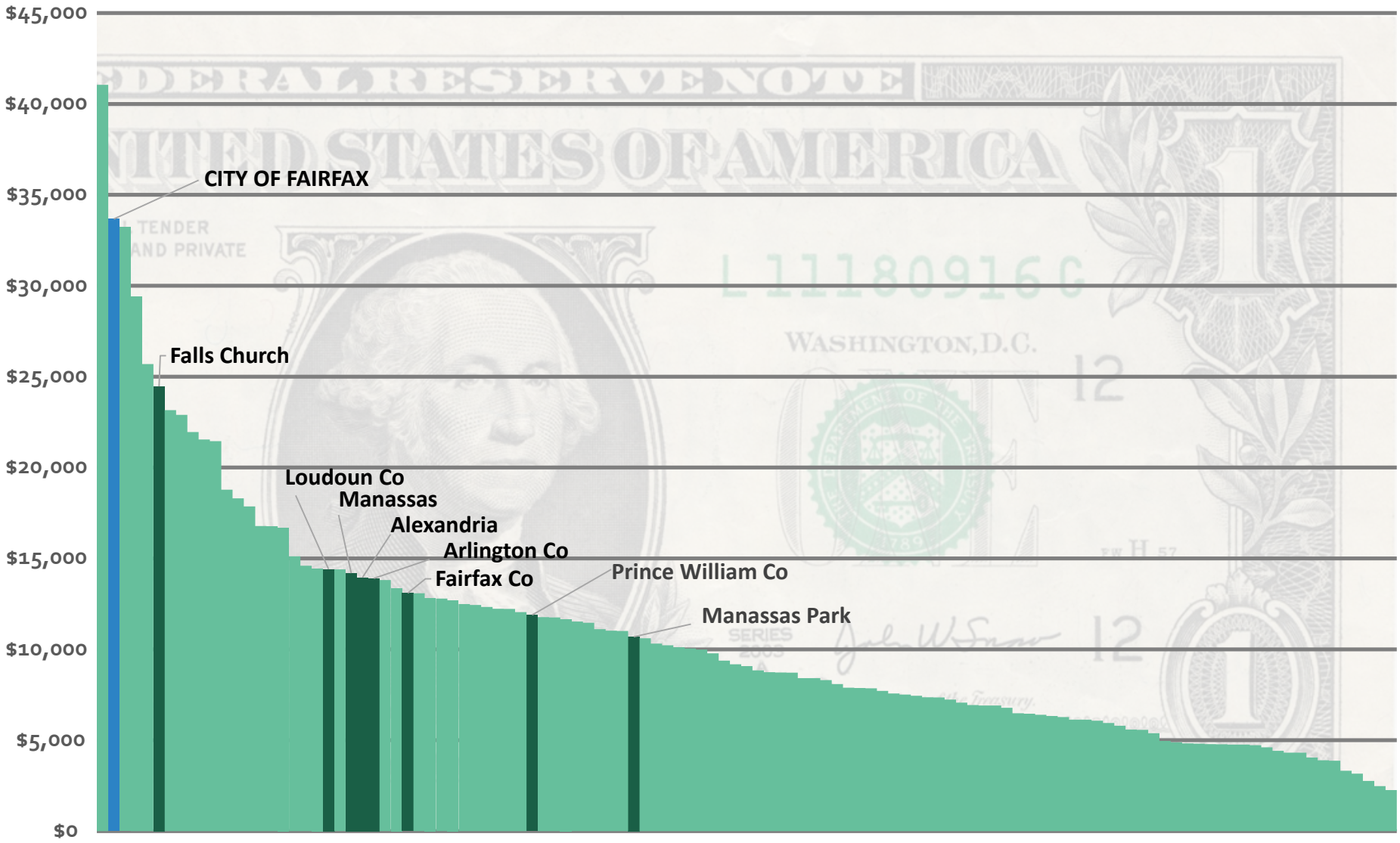
In 2035, Fairfax is a city with… an economy that cultivates and promotes business success and entrepreneurial opportunities for large, small, and independent businesses and capitalizes on national, regional and intellectual partnerships.

The City has long been a hub for economic activity within Northern Virginia. Due to its central location; proximity to regional destinations such as George Mason University, the Fairfax Courts Complex and Inova Fairfax Hospital; and its setting among transportation crossroads, the City has traditionally boasted a larger proportional share of the region's office and retail activity than its relatively small size and population would suggest. This longstanding concentration of economic activity still holds true, with the City achieving the second-highest amount of retail sales per capita of any Virginia jurisdiction (as shown in Figure 37), and a regional share of office space nearly five times the City's share of Northern Virginia's land area.

This cluster of economic vitality provides Fairfax with many benefits, such as a diversified revenue stream that enables the City to rely less on residential tax revenue than do most nearby jurisdictions. Furthermore, a high concentration of office and retail activity enables City residents to have varied employment and shopping opportunities relatively close to home.

Throughout the Comprehensive Planning process, sustaining this historical advantage has emerged as a priority. However, ensuring that the City remains as an economic hub for the region requires both a commitment to maintaining existing commercial infrastructure and positioning the City to be at the forefront of emerging marketplace trends.

FIGURE 37 2016 TAXABLE SALES PER CAPITA FOR VIRGINIA JURISDICTIONS WITH POPULATION OVER 10,000



Source: Virginia Department of Taxation

Opportunities and Challenges

Shifts in the office market

While the City has seen significant increases in office vacancies over the past decade, this trend is present in Fairfax County and Northern Virginia as well. In fact, the City has generally kept a lower office vacancy rate than the region as a whole. With previous regional overbuilding, increases in teleworking and more efficient office space utilization, however, an overall downward trend in office demand is expected to continue for the foreseeable future. The 2013 Fairfax Boulevard Market Analysis only forecasted a net absorption of 50,000 square feet of office space along the corridor over the ten-year study period.

The City office market, while large in size, is overwhelmingly comprised of Class B structures that offer few modern amenities. Given the increasing interdependence and fluidity of Northern Virginia's office market, this can make office space in the City less competitive and less desirable to prospective tenants than Class A office space in surrounding areas, particularly in more rapidly expanding sectors of the economy.

FIGURE 38 OFFICE VACANCY RATE

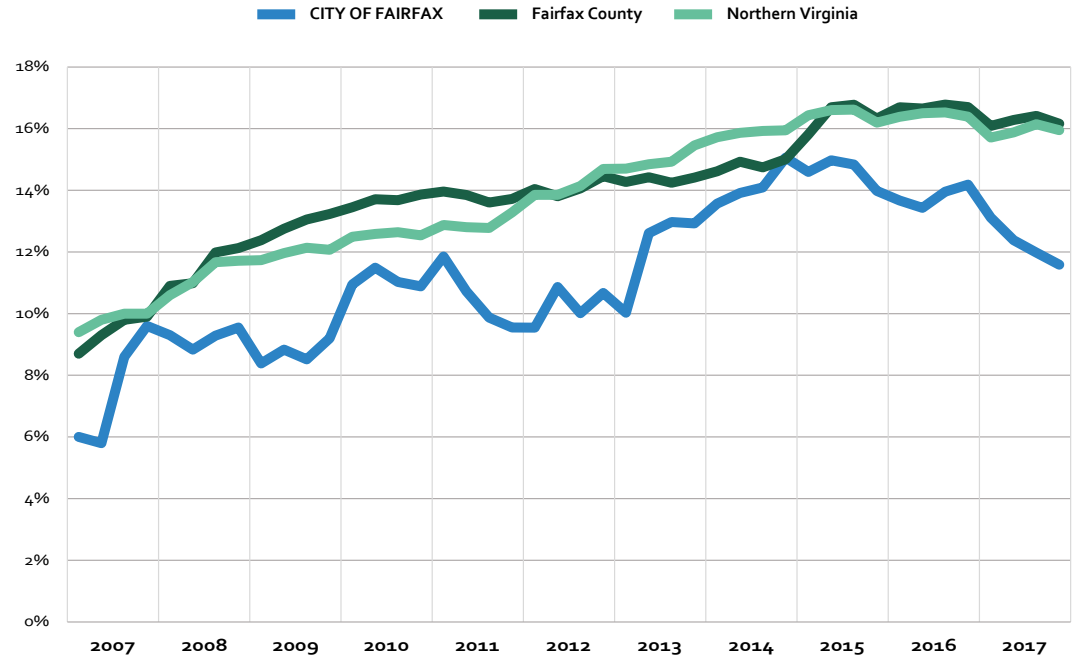


FIGURE 39 OFFICE MARKET BY CLASS, 2017

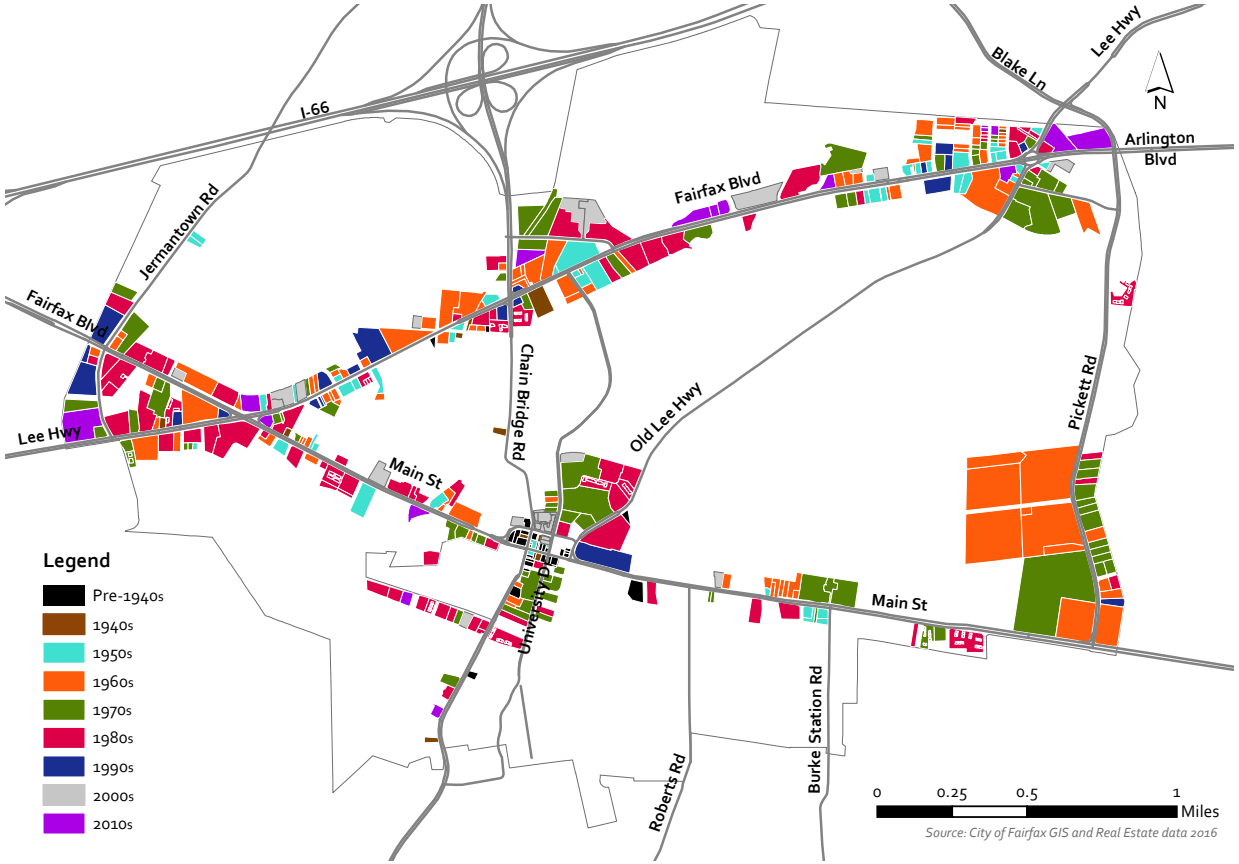
Shifts in the retail market

With consumers gravitating to online purchases and larger format retailers, demand for retail space has been decreasing region-wide in recent years. This has been especially true for older retail spaces that lack modern design requirements. The reduction in demand for traditional retail has been partially offset by increases in demands for food and drink and service type establishments.

These trends have combined to create vigorous regional competition for high-value retailers. As shown in Figure 6 (p. 21), numerous mixed-use centers have been built, or are being planned, within 10 miles of the City. All of these centers use retail as a linchpin to their fiscal success. In order to thrive in this competitive and interdependent retail market, the City must both be mindful of the pragmatic limits of regional retail demand, and must also offer high-quality retail spaces for prospective tenants.

With the vast majority of the City's existing commercial space constructed in the 1960s and 1970s, ensuring that both area consumers and retailers have updated commercial space will greatly enhance the City's retail sector's appeal in this increasingly competitive retail marketplace.

FIGURE 40 COMMERCIAL AND INDUSTRIAL BUILDING AGE BY DECADE BUILT



Economic Vitality

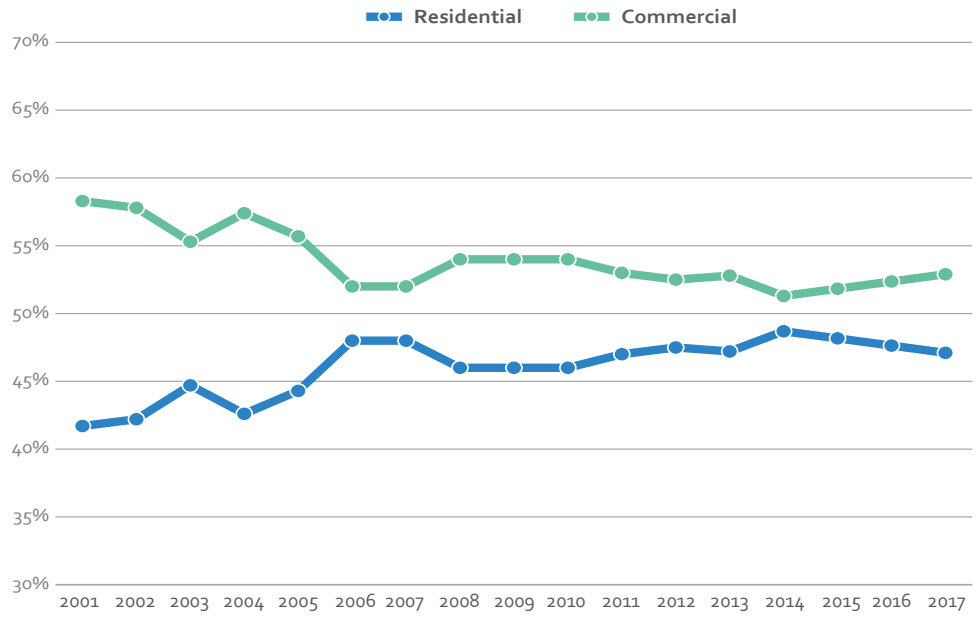
Goal 1

Increase the City's ratio of commercial to residential real estate.

Commercial properties tend to contribute more to the tax base than they consume in public expenditures because of relatively high real estate values and lower dependence on public services. The City has historically benefited from having a high ratio of commercial to residential development, resulting in a lesser tax burden on residences. As commercial properties have aged and new commercial development has slowed, this ratio has begun to shift. The City can offset this shift by supporting measures to increase values of existing commercial properties and encouraging new commercial development so that the value of nonresidential properties continues to comprise a greater proportion of the City's taxable properties.

OUTCOME EV1.1:	New development and redevelopment that maximize revenue generation from nonresidential buildings and uses.
ACTION EV1.1.1	Attract new commercial businesses while supporting and retaining existing businesses.
ACTION EV1.1.2	Leverage proximity to George Mason University to attract university spin-outs and startups.
ACTION EV1.1.3	Capitalize on proximity to Inova Fairfax Hospital to attract health- and wellness-related businesses.
ACTION EV1.1.4	Capitalize on regional growth in the technology-based, creative, and innovative sectors and encourage related businesses to establish in the City.
ACTION EV1.1.5	Pursue corporate headquarters to locate in the City.

FIGURE 41 ESTIMATED REVENUES GENERATED BY COMMERCIAL AND RESIDENTIAL SECTORS



NOTE: 2001-2014 data from City budgets. 2015-2017 data estimated based on revenue allocation assumptions from the City of Fairfax Finance and Accounting Department.

Source: City of Fairfax Budget.

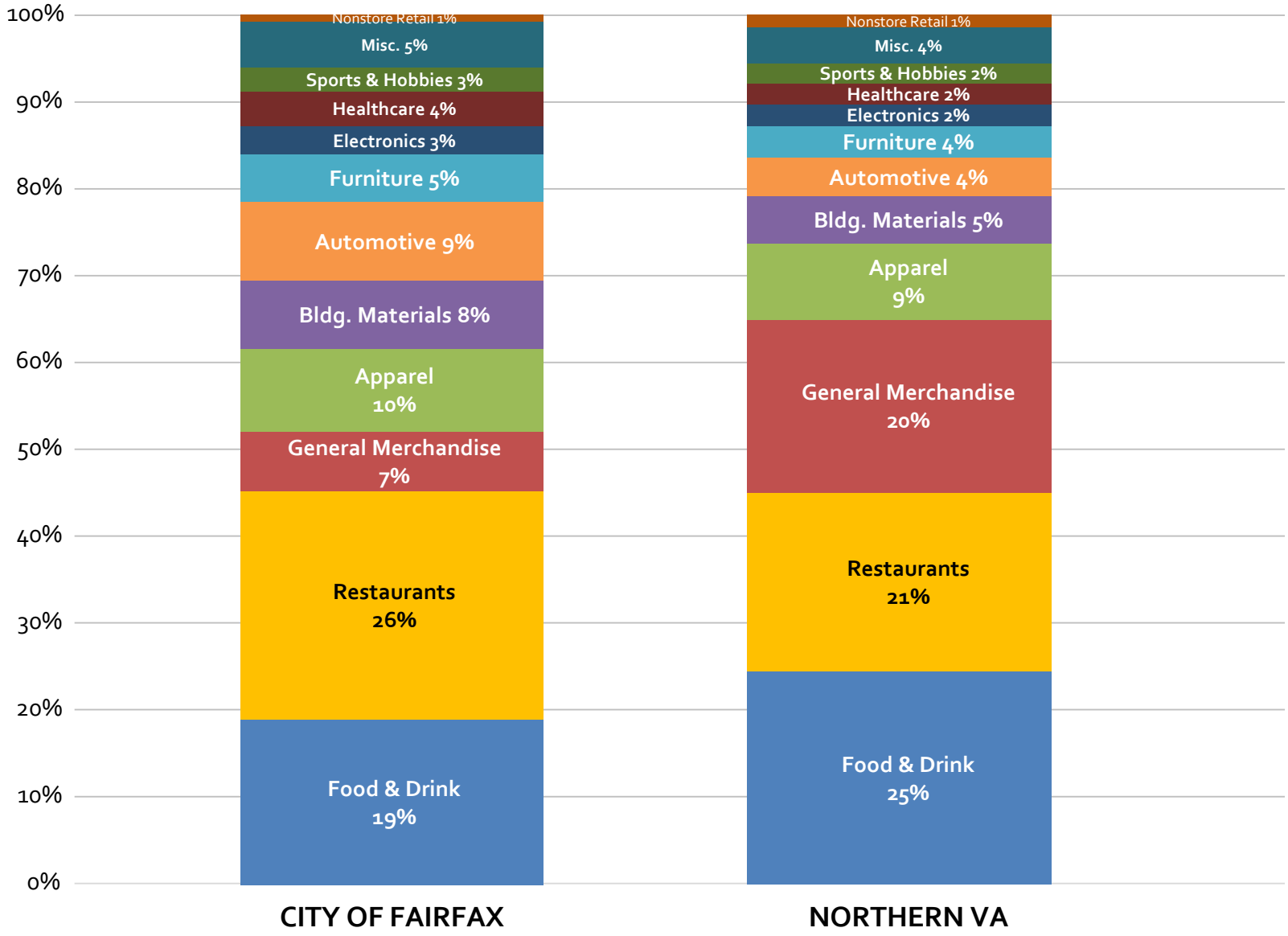
Economic Vitality
Goal 2

Support diversification of the retail, service, and office sectors.

While the City has strong current levels of retail and restaurant sales, some critical sectors are underrepresented in Fairfax's current retail inventory, as shown in Figure 42. This lack of retail diversity – coupled with an inventory of buildings heavily composed of 1960s-70s structures – points to a potential loss of market share to nearby retail areas that are more reflective of current tastes and consumer demand. With a high percentage of Class B office space, the office market in the City may also be less competitive than surrounding office development in Fairfax County. The City will strive to support existing and attract new businesses that fill market or growth opportunities and support an improved office space inventory.

OUTCOME EV2.1:	The retail and service sectors more effectively compete with other regional commercial sectors, resulting in increased desirability as a destination.
ACTION EV2.1.1	Attract new retail and service businesses representing sectors that have the ability to become regional destinations.
ACTION EV2.1.2	Create new commercial areas that contain the amenities and atmosphere necessary to attract top-tier commercial tenants.
OUTCOME EV2.2:	An improved office space inventory attracts high-value tenants.
ACTION EV2.2.1	Work with owners and operators of existing office buildings to encourage property renovations and upgrades needed to bring properties to Class A status.
ACTION EV2.2.2	Encourage the provision of Class A office space in new commercial development projects and renovations.
OUTCOME EV2.3:	A strong relationship with George Mason University is leveraged to support new development and investment that capitalizes on the needs of the University and supports the Comprehensive Plan Vision for the City.
ACTION EV2.3.1	Use the newly-created position of MEC Business Incubator Director to graduate a consistent pipeline of at least one tenant per year to a permanent location within the City.
ACTION EV2.3.2	Explore the establishment of a local development corporation or other formal partnership between the City and George Mason University.

FIGURE 42 PERCENTAGE OF TAXABLE RETAIL SALES BY STORE CLASSIFICATION



Source: Virginia Department of Taxation

Economic Vitality
Goal 3

Transform the Commercial Corridors and Activity Centers.

Being within the economically robust Northern Virginia region presents great opportunity for the City to leverage its many advantages to create and strengthen further economic vitality. The City's varied Commercial Corridors and downtown area provide excellent opportunities to capitalize on the region's growing economy, and to continue being an economic hub for future generations. The City will strive to transform these areas into distinctive regional destinations that can compete effectively with other development and mixed-use centers in Northern Virginia.

OUTCOME EV3.1:	Redevelopment projects in the Commercial Corridors and Activity Centers create destinations that attract tenants, customers, and residents.
ACTION EV3.1.1	Develop a branding and marking strategy for individual Activity Centers.
ACTION EV3.1.2	Create a commercial targeting strategy to focus the City's efforts on attracting businesses that would have the greatest impact in competing with other regional commercial sectors.
ACTION EV3.1.3	Prepare conceptual designs for the Activity Centers and present in dynamic marketing materials that clearly demonstrate the desired mix of uses, residential density, building intensity, design aesthetic, multimodal connections, and parking.

Economic Vitality

Goal 4

Create a single ZIP Code for the City.

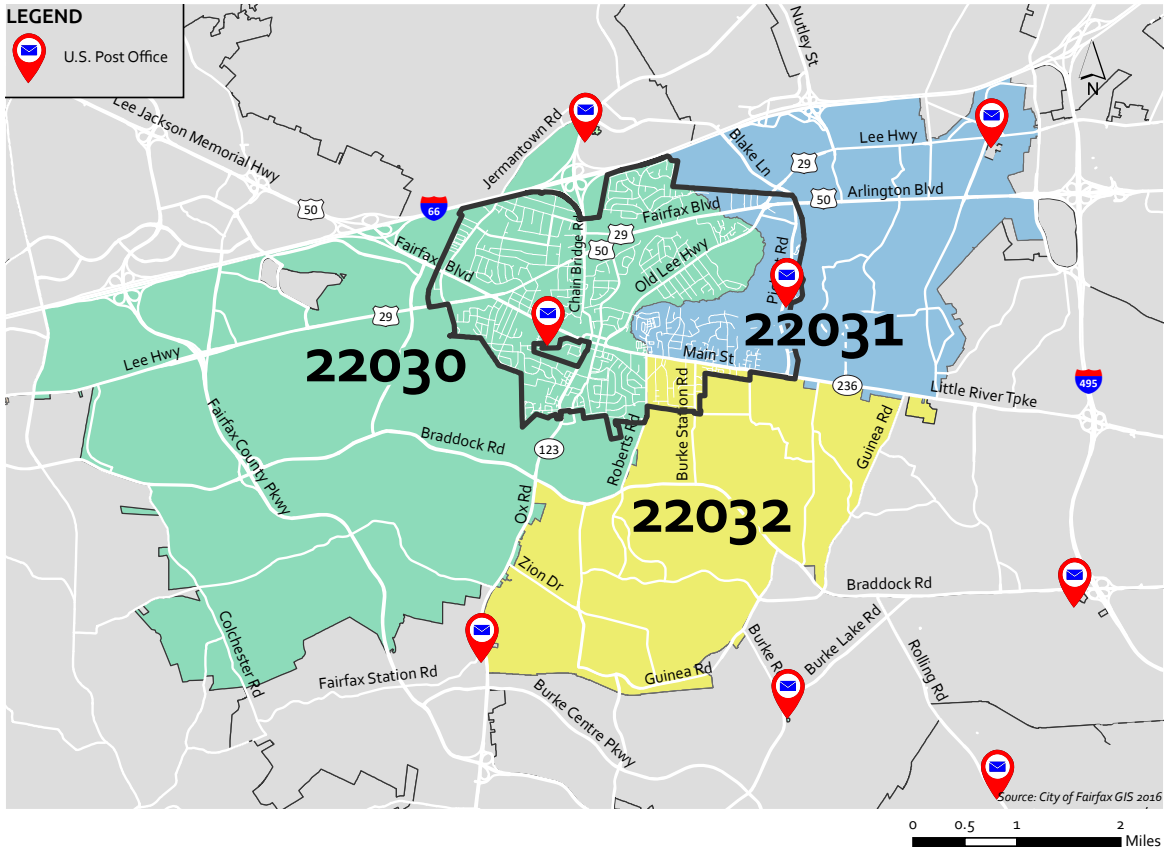
The City currently contains portions of three ZIP Codes, all of which contain large portions of Fairfax County in addition to City addresses. This creates a complicated web of addresses, which leads to confusion among residents and businesses regarding which areas are located within the City or Fairfax County. Significantly, this has also led to difficulties in revenue collection, since some businesses have reported their addresses in the incorrect jurisdiction – and with e-commerce based revenue becoming more common, this may become a more noteworthy problem in the future. Creating a common ZIP Code for City addresses mitigates these revenue-related problems with an exclusive way of identifying City addresses and allowing business revenue to be more accurately collected. This would also serve a unifying function to easily distinguish the City from the surrounding portions of Fairfax County in terms of economic competitiveness.

OUTCOME EV4.1: The U.S. Postal Service designates a ZIP Code that is unique to addresses within City limits.

ACTION EV4.1.1 Conduct a cost-benefit analysis.

ACTION EV4.1.2 If supported by the cost-benefit analysis, request a ZIP Code Boundary Review from the U.S. Postal Service.

FIGURE 43 CITY OF FAIRFAX ZIP CODES



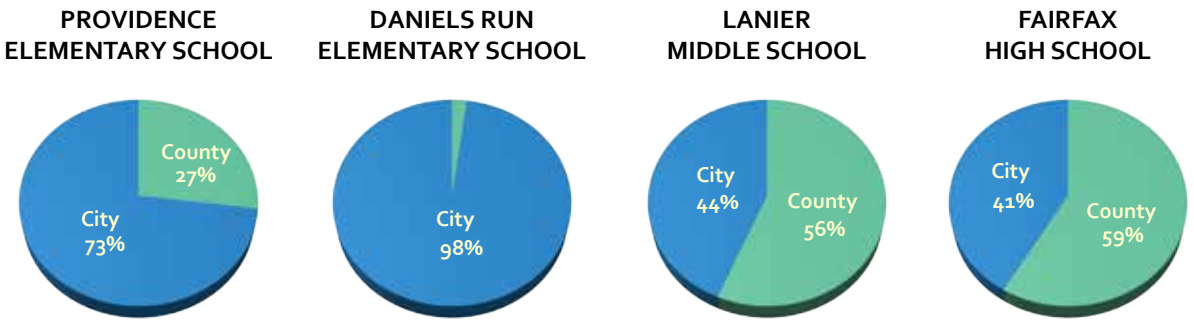
6 Community Services

One of the most crucial elements in the long term desirability of the City is maintaining and improving the high-quality services that residents and businesses have come to expect. This Chapter examines health, safety and welfare issues for which the City provides or facilitates services to its citizens, businesses and visitors. As an independent jurisdiction, Fairfax emphasizes providing quality public facilities and services. Public facilities are the institutions and land intended for the community's general use and benefit. Some of the primary services provided by the City addressed in this Chapter are Education, Parks and Recreation, Cultural Arts, Public Safety, and Utilities and Infrastructure as described below.

Education

Over 3,100 children who are City residents are enrolled in Fairfax County Public Schools (FCPS), with the vast majority of those students attending one of Fairfax's four schools. Through a School Services Agreement with FCPS, the City of Fairfax School Board manages the school buildings, while FCPS hires staff and develops curricula. The agreement also accommodates students from Fairfax County in the City school facilities where capacity allows. The percentage of City and Fairfax County students who attend each of the City's four public schools is provided below.

FIGURE 44 SCHOOL ENROLLMENT BY STUDENTS' PLACE OF RESIDENCE



There are also four private schools currently located in the City. Paul VI Catholic High School serves grades 9-12 with just over 1,000 students currently enrolled. A new location for this school is under construction outside the City, and the current location is anticipated to close once the new location is operable. Saint Leo the Great Catholic School serves grades Pre-K-8 with a current enrollment of 410 students. The New School of Northern Virginia is a private liberal arts and science school serving grades 6-12 with a current enrollment of approximately 150 students. Saint Anthony Academy serves grades K-12 with a current enrollment of over 30 students. All public and private schools currently located in the City are shown in Figure 45.

The City is also surrounded by several higher education facilities. George Mason University's Fairfax Campus began with 356 students in 1964, after the completion of construction of the first four buildings. Today, 21,442 full-time equivalent students come to the Fairfax Campus, which includes 80% of the

enrollment of all Mason's campuses. The Annandale campus of Northern Virginia Community College opened in 1967 and is now the largest of all NOVA campuses. The 2014-2015 enrollment for all campuses was 34,586 full-time equivalent students. Virginia International University was founded in 1988 and had 1,876 students enrolled as of the July 2015 - June 2016 semester. Ivy Christian College was founded in March 2006 and received accreditation in May 2014. The reported enrollment for 2013 was 319 students. Osher Lifelong Learning Institute (OLLI) offers classes to Northern Virginia residents in their retirement years.

FIGURE 45 PUBLIC AND PRIVATE SCHOOLS, K-12

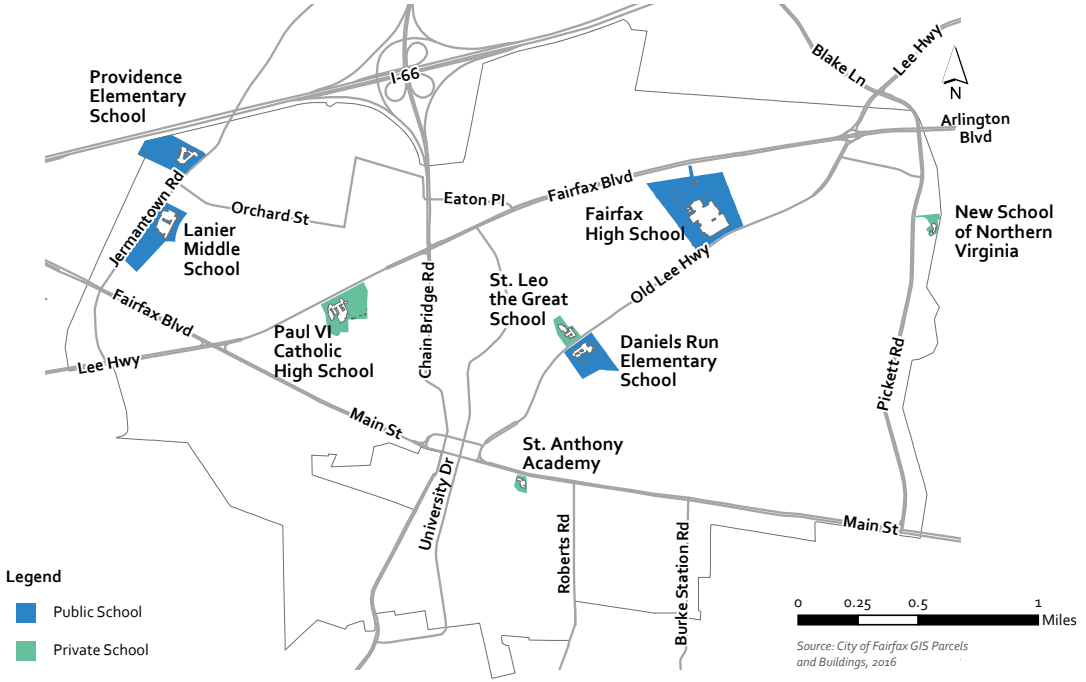


FIGURE 46 LOCAL HIGHER EDUCATION AND LIFELONG LEARNING

Parks and Recreation

A diverse network of public parks and open space areas, including recreation fields, natural areas, informal open spaces, and a trail system is provided throughout the City. Containing approximately 200 acres of land, the City's parks fall into four categories: regional parks, community parks, neighborhood parks, and vest pocket parks as shown in Figure 47. Most trails in the City are multipurpose recreational trails serving the needs of pedestrians, joggers, and bicyclists.

FIGURE 47 OPEN SPACE AND PARKS BY TYPE

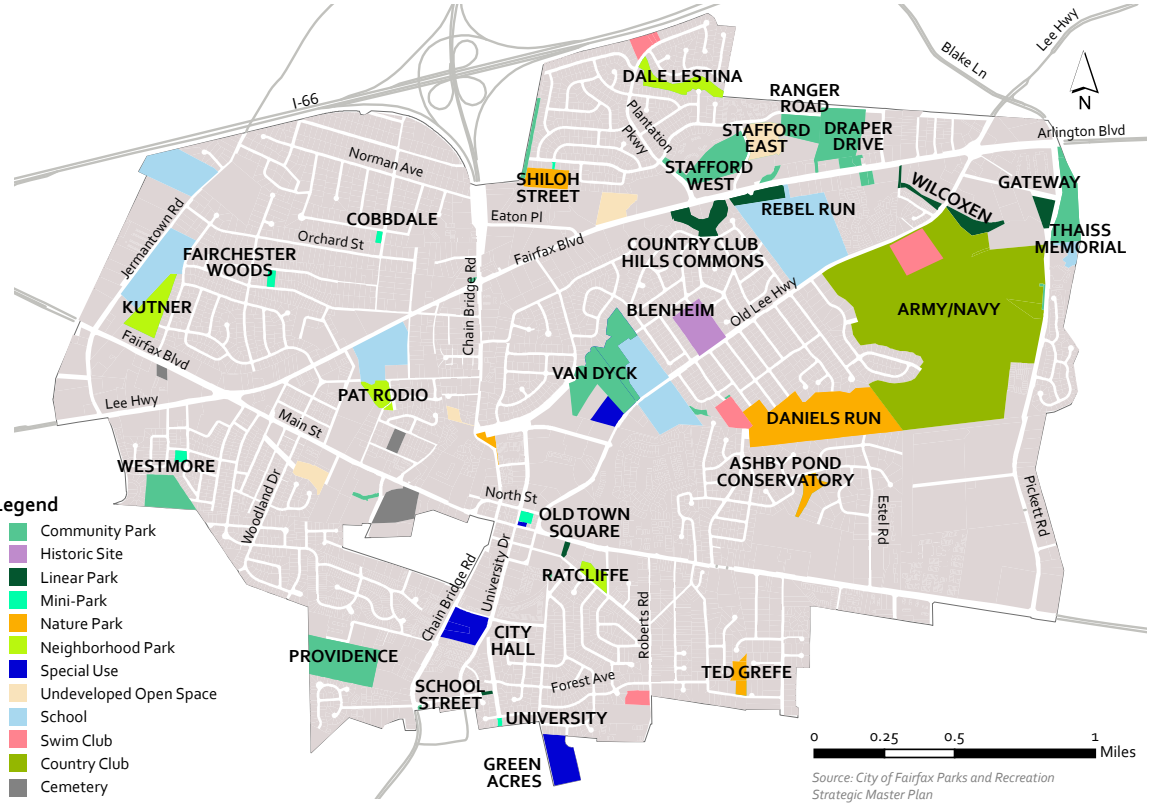
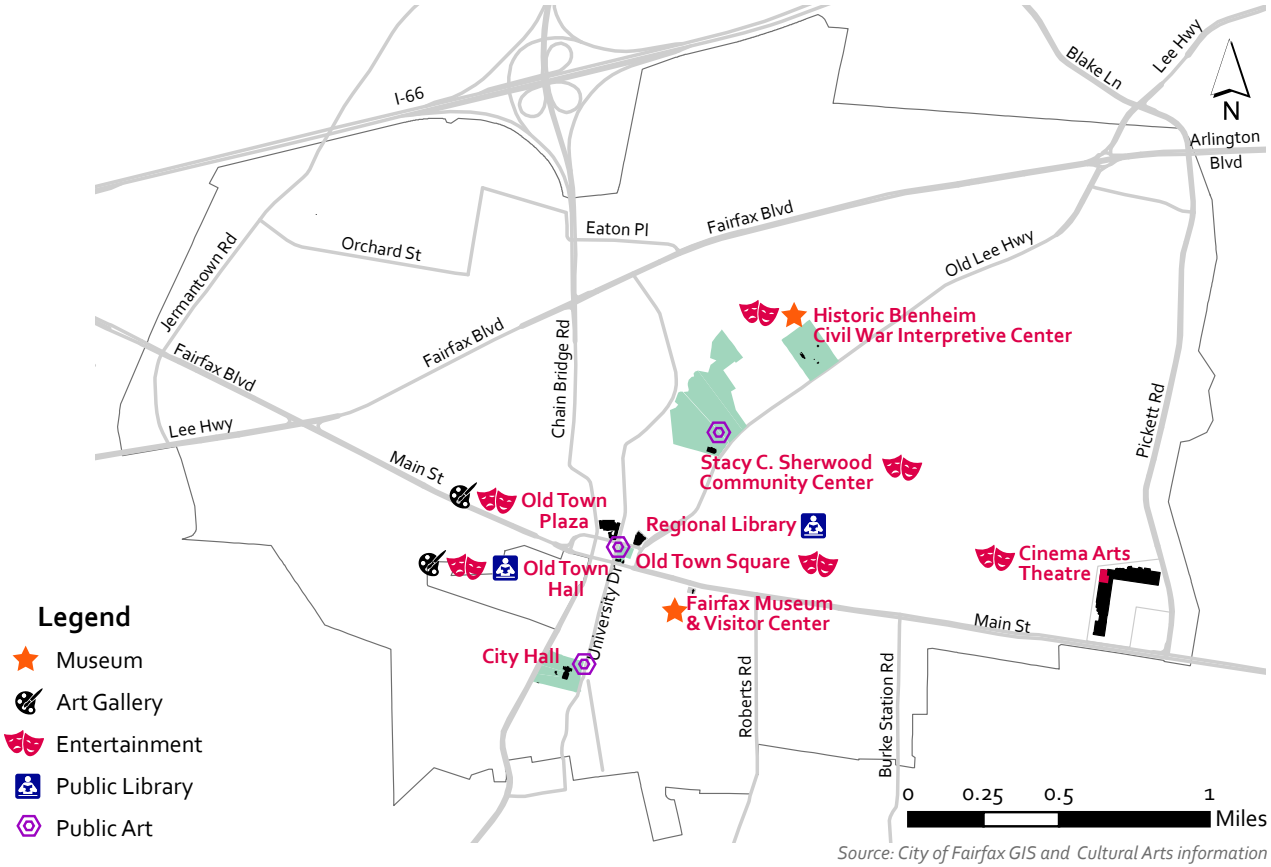


FIGURE 48 CULTURAL FACILITIES AND PUBLIC ART



Source: City of Fairfax GIS and Cultural Arts information

Cultural Arts

The City's cultural arts activities and special events draw people to the City and contribute to the unique sense of place and close-knit community, offering distinctive venues to unite members of the community. Currently, public art and cultural facilities are focused mainly in and around Old Town, as shown in Figure 48. The City has a museum, art galleries, and other performance venues; however, there is a lack of performing arts venues for theater and other performance groups.

Police

The Police Department, the City's primary law enforcement agency, is responsible for protecting life and property, preventing crime, detecting and apprehending criminal suspects, and maintaining order. The ability to anticipate, prevent, and manage crime; minimize threats to property; and minimize damage from environmental hazards all contribute to public safety.

Fire

The Fire Department furnishes fire suppression, rescue, emergency medical services, and emergency medical transportation both within the City and in an approximately 14-square mile area of Fairfax County. In return, Fairfax County provides a computer-aided dispatch (CAD) service for all fire and rescue vehicles as well as "first due" engines and rescue response in the areas along Pickett Road near the tank farm and along Jermantown Road near the schools, as well as backup response in the remainder of the City.

Emergency Management

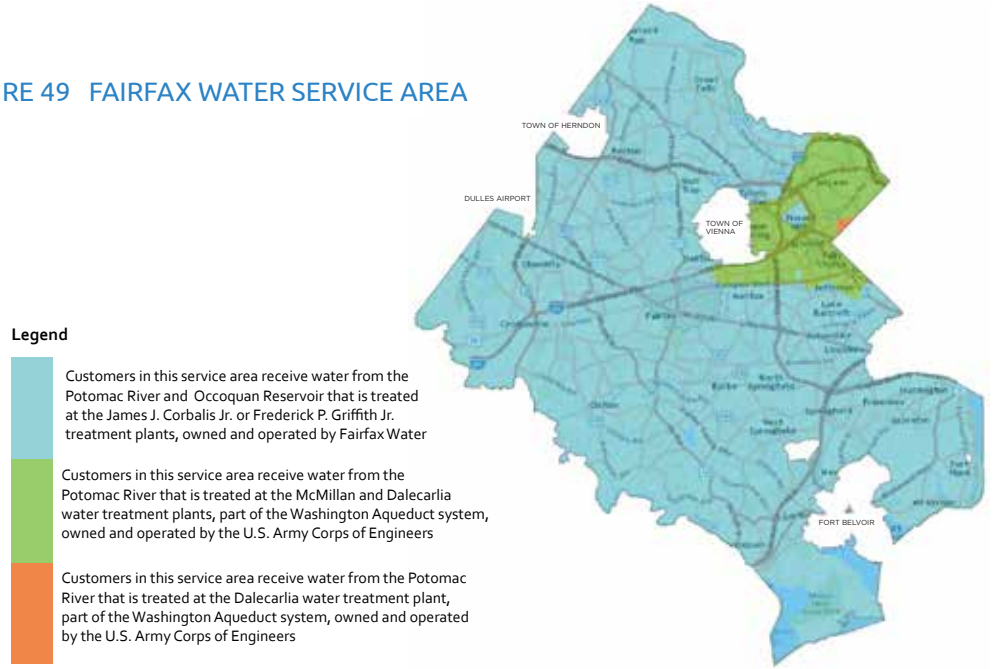
The Office of Emergency Management (OEM) acts as liaison to all emergency response agencies, monitors for and alerts of any impending natural or man-made safety issues, and develops training schedules for emergency personnel. OEM also ensures that safety documents are kept current, such as the state-mandated Comprehensive Emergency Management Plan and the Northern Virginia Hazard Mitigation Plan.

Utilities

The City sold its water system to Fairfax Water on January 2, 2014. Since that sale, Fairfax Water has been providing water services to the City as shown in Figure 49. The City operates its own wastewater collection system as shown in Figure 50. Wastewater originating in the City's wastewater system is treated by Fairfax County at its Noman M. Cole, Jr., Pollution Control Plant by a contractual agreement that provides a guaranteed treatment capacity for the City. The City manages, maintains, and repairs its stormwater system, which consists of approximately 60 miles of storm drain pipe and 3,650 storm sewer structures throughout the City.

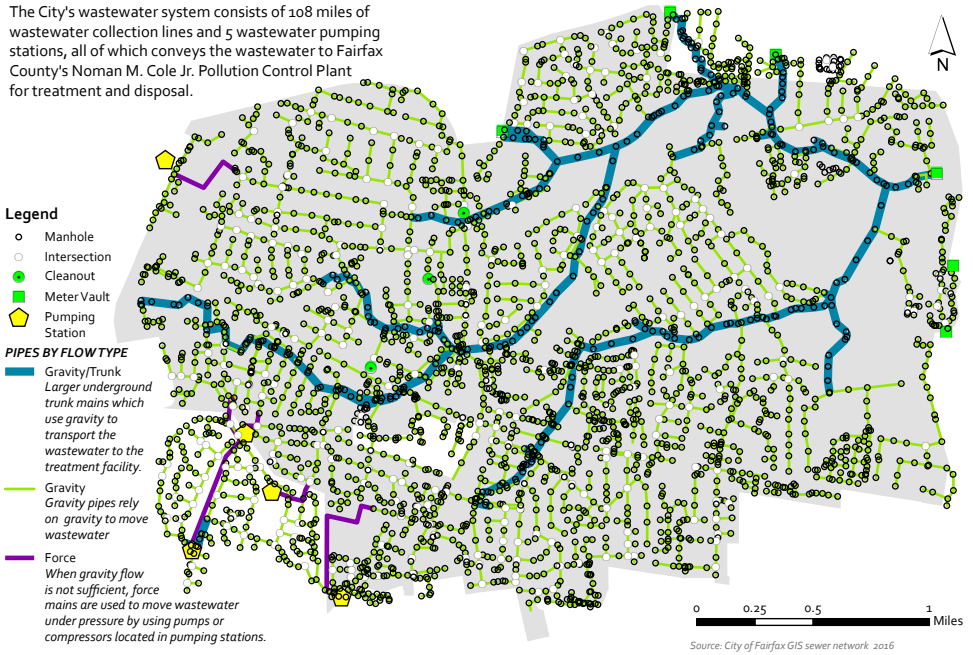
The City does not own or operate any electric, telephone or cable utilities. It does, however, own the rights-of-way where transmission lines are located. Approximately 67 miles of City streets contain utility poles supporting overhead electric, telephone, and cable television wires.

FIGURE 49 FAIRFAX WATER SERVICE AREA



Source: Fairfax Water 2016 Annual Water Quality Report

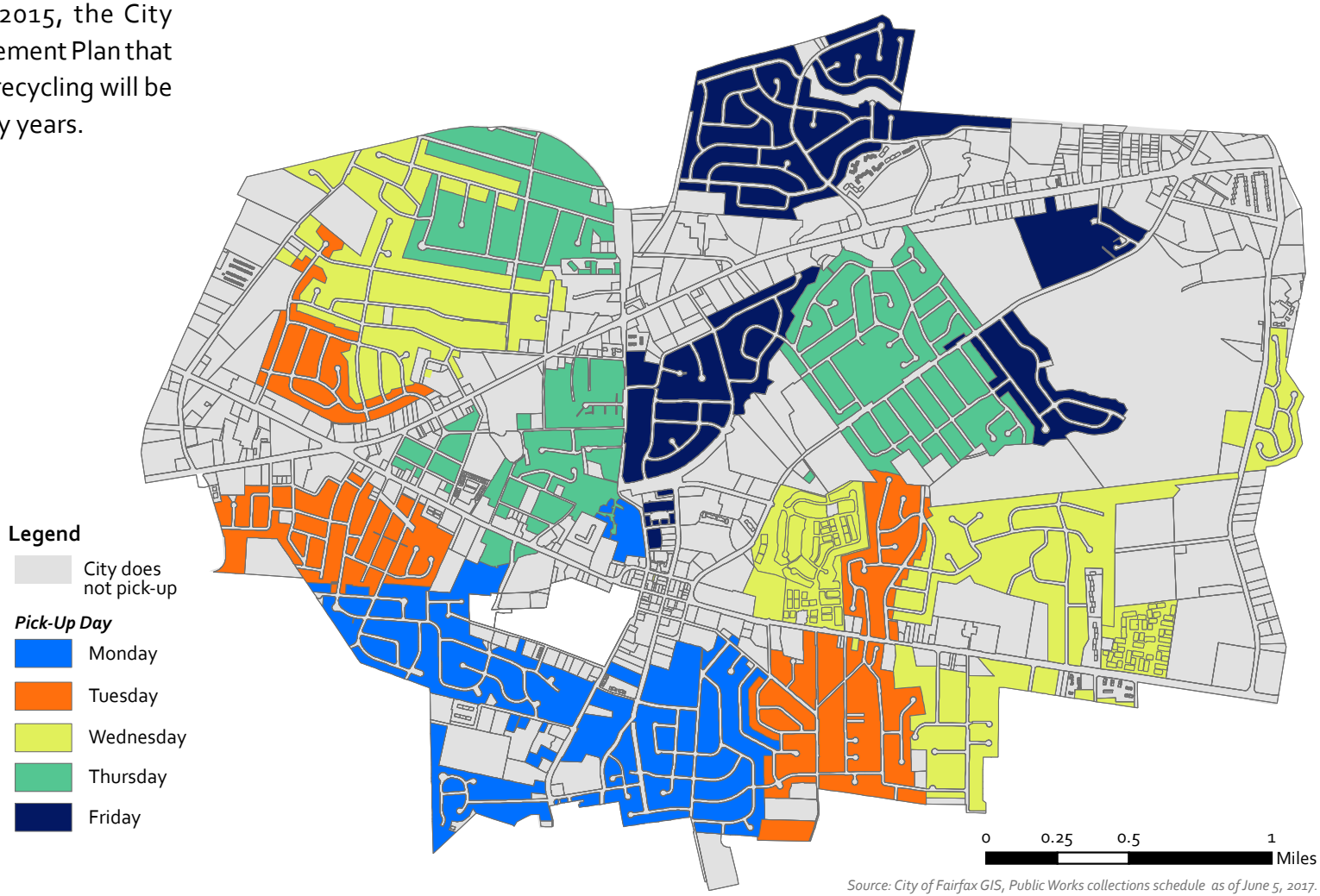
FIGURE 50 WASTEWATER COLLECTION SYSTEM



Source: City of Fairfax GIS sewer network 2016

The City provides weekly refuse and recycling collection for residents in detached homes, duplexes, and townhouses. Curbside collection service is shown in Figure 51. City businesses and multifamily complexes use private refuse and recycling services. In 2015, the City adopted a Solid Waste Management Plan that outlines how solid waste and recycling will be managed over the next twenty years.

FIGURE 51 RESIDENTIAL REFUSE AND RECYCLING CURBSIDE COLLECTION



Source: City of Fairfax GIS, Public Works collections schedule as of June 5, 2017.

Opportunities and Challenges

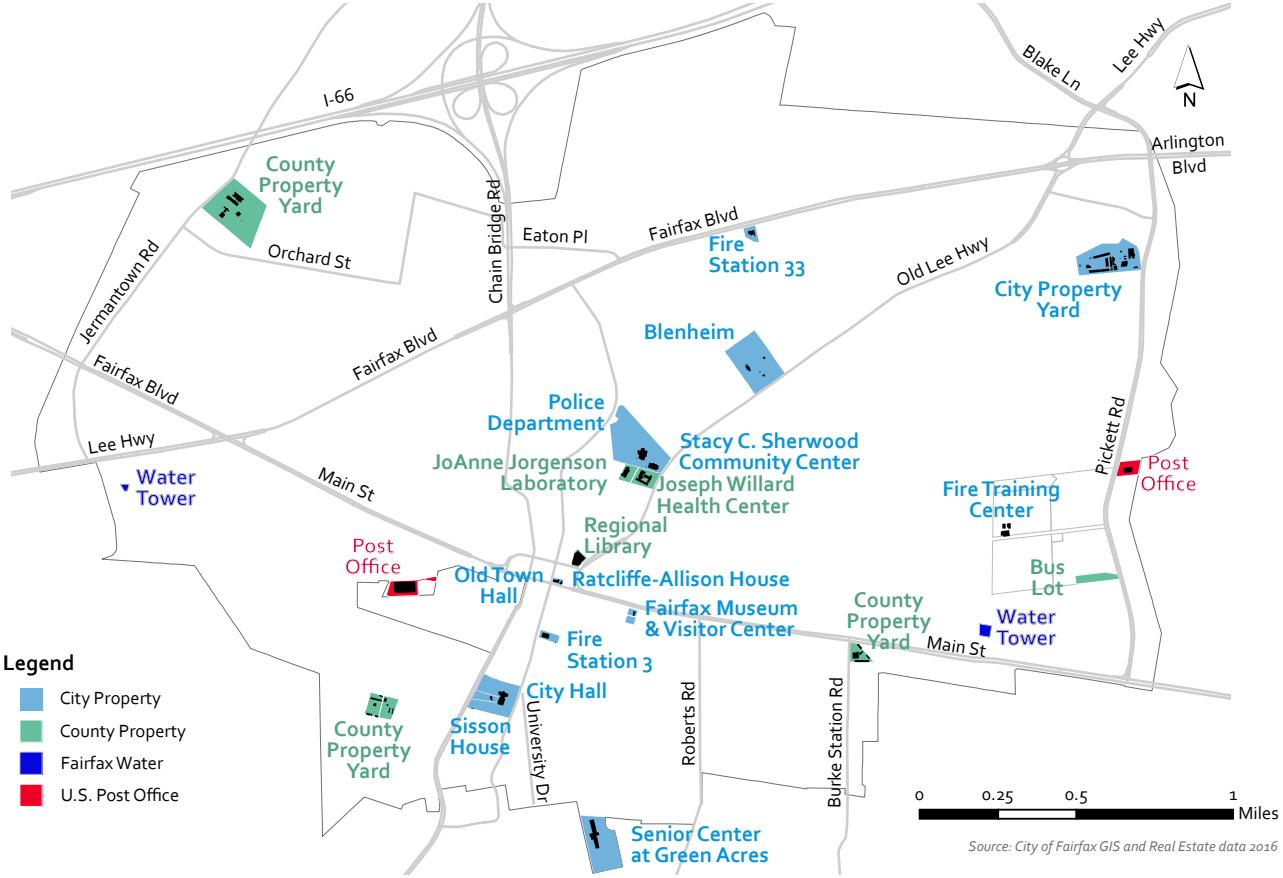
Ongoing maintenance of public facilities

Public facility locations are shown in Figure 52. Several of these facilities in the City are historic structures that have withstood years of service. Ensuring that community services and facilities are phased with changing demand is a major component of facility management, since the quality of public facilities contributes to the City's quality of life.

Service agreements

The relatively small size of the City makes provisions for some public services inefficient. The City provides many services to its citizens through contractual agreements with Fairfax County and regional agencies. This provides for more efficient service delivery while allowing the City to retain some control. Aside from the School Services Agreement with FCPS, City residents may use any of eight regional and fourteen community libraries that compose the Fairfax County library system. Fairfax County also provides health and human services assistance, including environmental health, communicable disease programs, and public health services.

FIGURE 52 PUBLIC FACILITIES



Growth and development

Population growth and new development can impact demands on public facilities and services. Demands, however, can be monitored to ensure that the resulting impacts are realized in advance and factored into the decision-making process for accommodating new development.

Education

Guiding Principle:

In 2035, Fairfax is a city with… world-class community schools and a best-in-class education from preschool to post-high school that prepares students to be productive, responsible members of society, capable of competing in the global economy and motivated to pursue life-long

Between the City's public schools, its proximity to higher education institutions, and its accessibility to lifelong learning offerings, education factors heavily into the City's quality of life. Excellent public education is not just a priority for current residents, but is also an investment in the City's future, and City policies should continue to ensure that educational opportunities are prioritized for future generations. The City will strive to provide excellent instructional services and superior facilities, geared to the needs of our evolving and diverse population. The City of Fairfax School Board maintains its own Strategic Plan and is responsible for the School Services Agreement with FCPS, through which the City is able to ensure outstanding facilities and instructional accommodations for the 3,100 public school students who reside within City limits. As the City grows and student needs evolve, both the City government and the City of Fairfax School Board should continue to prioritize educational services in order to provide the highest possible levels of service for the future needs of the City's school-aged population.

The City also supports non-school-aged education through promotional campaigns, operating some educational programs and allowing access to City owned facilities for educational programs provided by other entities.

Education
Goal 1

Ensure the City's public education needs are met.

The school services agreement with FCPS has provided outstanding instructional programs for City students, combined with an impressive amount of local control. While all four of the City's public schools have been renovated since 2000, changes in student needs, technology and enrollment must continually be monitored to ensure facilities remain exceptional.

The City School board possesses a deed of covenant on the existing Green Acres site at the south end of the City to accommodate a third elementary school should enrollment increase to a point where Daniels Run and Providence Elementary Schools could not reasonably be expanded to accommodate the growth. The School Board has selected Providence Park as an alternative site for a future school, which would be particularly more appropriate if it is consolidated with the adjacent West Drive Property Yard. Further discussion on this site is provided in the Parcel Specific Recommendations in the Land Use Chapter of this plan.

OUTCOME E1.1:	The School Services Agreement with FCPS, guided by the City of Fairfax School Board, continues to provide City students with the highest quality education.
ACTION E1.1.1	Continue to follow the established guidelines of the School Services Agreement and to monitor its implementation.
ACTION E1.1.2	Maintain a close working relationship with the Mayor, City Council and City staff regarding school needs and continue to provide information to the elected officials and staff.
OUTCOME E1.2:	Public school facilities and grounds meet the current and future needs of the school-aged population.
ACTION E1.2.1	Continue cooperation between City government and the City of Fairfax School Board to assess and plan for impacts from future residential development.
ACTION E1.2.2	Monitor potential Fairfax County school boundary adjustments to anticipate impacts on City school enrollment.
ACTION E1.2.3	Continue to examine potential need for additional school facilities and the best use for the City of Fairfax School Board's Deed of Covenant on Green Acres.
ACTION E1.2.4	Continue to ensure a safe learning environment, proper program capacities, and the availability of the latest technology and functional accommodations.
ACTION E1.2.5	Promote environmentally friendly practices for school facilities and grounds.

Education
Goal 2

Ensure access to educational and training opportunities for all generations.

City residents place a high priority on education at all stages of life – from early childhood education up to continuing education and adult lifelong learning. Prioritizing the continued growth and development of the City's educational offerings and linkages by collaborating with local education providers and institutions will help enhance the City's livability for future generations.

OUTCOME E2.1:	All children will be well-prepared to begin elementary school.
ACTION E2.1.1	Continue to promote Pre-K instructional opportunities for all City Pre-K children.
ACTION E2.1.2	Increase access to early childhood literacy and after school care at the City's community facilities, City of Fairfax Regional Library, and other institutions.
OUTCOME E2.2:	The City's residents will have access to facilities and programs that foster an informed community.
ACTION E2.2.1	Maintain access to the City's community facilities, City of Fairfax Regional Library, and other institutions for ongoing dialogue in educational events and discussions.
ACTION E2.2.2	Continue to provide residents and businesses with access to timely information on City government programs and initiatives via the monthly CityScene newsletter, Cityscreen-12 television station, City website, and email alerts.
OUTCOME E2.3:	Partnerships and community resources provide opportunities for training and continuing education.
ACTION E2.3.1	Continue to foster good relations with nearby education providers such as George Mason University and Osher Lifelong Learning Institute (OLLI).

Parks and Recreation

Recreation and open space make an essential contribution to a healthier population and a greener city. They are integral to the City's quality of life and provide beauty, respite, and opportunity to enjoy the outdoors. In addition, City staff takes pride in providing quality experiences for the community through services and programs that enrich people's lives and contribute to total development of the individual, family, and the community.

Guiding Principle:

In 2035, Fairfax is a city with...
inviting, well-maintained parks, trails, open spaces and multi-generational community centers.

In June 2014, the Parks and Recreation Advisory Board (PRAB) presented the City of Fairfax Strategic Master Plan for Parks, Recreation, Trails, Open Space, Events and Cultural Arts to the City Council. Referred to as the Strategic Master Plan, it contains measurable goals, objectives and policies that the City Council, PRAB and the Commission on the Arts use as guidance when determining program and facility needs. The Strategic Master Plan should be referenced for specific contributions toward the actions listed for this Guiding Principle.

Parks and Recreation Goal 1

Develop high-quality park infrastructure.

A high-quality park system should serve the community's needs with a range of services and facilities for all age groups and abilities provided in a safe environment. As the City's population grows, new interests and demand for a variety of activities will require periodic evaluation of the facilities the City offers. It is also important to look at the locations of facilities to ensure all neighborhoods are provided with equitable access to parks and recreation amenities and programs. High-quality, accessible parks, facilities, recreation, and open space should be acquired, preserved, developed, and redeveloped throughout the City for public health, enjoyment and environmental purposes. (Actions specifically relating to the City's trail network may be found under Multimodal Transportation Outcomes MM2.2 and MM2.3.)

OUTCOME PR1.1:	A well-connected system of parks that provides citizens with healthy choices for recreation.
ACTION PR1.1.1	Identify and address gaps in the connections between the City's parks and open space.
ACTION PR1.1.2	Identify opportunities for future open space in neighborhoods that are undersupplied in public recreation and open space opportunities.
ACTION PR1.1.3	Enhance public access to parks and recreational facilities by making necessary infrastructure improvements.
ACTION PR1.1.4	Partner with the Department of Public Works on efforts to improve pedestrian and bicycle networks throughout the City.
OUTCOME PR1.2:	A greater awareness of the City's natural resources and commitment to protect and enhance them.
ACTION PR1.2.1	Implement measures to preserve privately-owned land adjacent to parks and trails in perpetuity, e.g., utilizing conservation easements, deed restrictions, etc.
ACTION PR1.2.2	Adopt tree preservation guidelines for parks, open space, and trails.

Parks and Recreation Goal 2

Provide programs and services that meet the needs of the community.

High-quality programs, facilities, and services – including large-scale community events that draw significant attendance – can improve the tax base, increase property values, attract businesses, produce revenue to offset operating costs, and provide indirect benefits to our economy, contributing to the City's continued growth and development.

OUTCOME PR2.1:	Robust programming of the City's parks and public facilities that provides opportunities for individuals of all ages and abilities to participate.
ACTION PR2.1.1	Conduct a study to determine how the City's long-term needs for a community center and senior center can be best met, and implement the recommendations of this study, including construction of recommended facilities.
ACTION PR2.1.2	Update Parks and Recreation facilities to ensure they are accessible to individuals of all abilities.
ACTION PR2.1.3	Expand and enhance facility, program, and service offerings through innovative funding, management best practices, and cost recovery efforts.
ACTION PR2.1.4	Enhance Old Town Square as a destination and community gathering place by providing a venue for arts, recreation, and green space.
OUTCOME PR2.2:	Expanded and enhanced partnerships with City businesses and other organizations such as City of Fairfax Schools, Fairfax County Park Authority, NOVA Parks, FCPS, George Mason University, Fairfax County Neighborhood and Community Services, and others to complement the services provided by the City.
ACTION PR2.2.1	Identify opportunities to expand partnerships with institutional and business communities.
ACTION PR2.2.2	Establish relationships and partnerships with various underrepresented, underserved, or diverse demographic groups in the City to assist with developing programs and services to meet the needs of these communities.
OUTCOME PR2.3:	Rehabilitation or construction of public facilities to meet the programmatic and recreational needs of the community.
ACTION PR2.3.1	Enhance safety, accessibility, quality of service, and cost effectiveness through comprehensive operations and maintenance programs and services.
ACTION PR2.3.2	Inventory the condition of existing public facilities and identify any necessary updates and repairs.

Parks and Recreation Goal 3

Market programs, special events, facilities, and services.

A broad range of marketing and public relations techniques are necessary to develop public awareness, strengthen community relations, bring a larger audience from outside of the City to our events, and further invigorate the local economy. The City will use innovative promotional and marketing initiatives to increase awareness, participation and support of programs, special events, facilities and services.

OUTCOME PR3.1:	A well-informed community that utilizes the City's quality programs and attends events.
ACTION PR3.1.1	Conduct public opinion surveys of Parks and Recreation customers to identify desired changes in facilities and programming.
ACTION PR3.1.2	Utilize a variety of communications platforms to publicize facilities, programs and events to the community.
OUTCOME PR3.2:	City facilities and events are a regional draw, resulting in increased economic vitality for local businesses.
ACTION PR3.2.1	Increase awareness, participation, and support of programs, facilities, and services using innovative promotional and marketing initiatives.

Cultural Arts

Guiding Principle:

In 2035, Fairfax is a city with…
a thriving cultural arts program that supports a variety of special events, art spaces and performance venues.

The City takes pride in the wide variety of cultural events, programs, and facilities it provides to enhance the quality of life for its residents. The City is committed to preserving and protecting its heritage, recognizing evolving socioeconomic and cultural patterns, and promoting the arts as an integral part of our spirit and vitality with wide ranging economic benefits.

In January 2013, the Commission on the Arts (COA) prepared a Strategic Plan with near-term (one to three years) and long-range objectives for cultural arts in the City. The plan "envisions an economically and culturally booming City with a vibrant arts community serving as a leading arts destination," supporting the Comprehensive Plan Vision. The goals of this Guiding Principle seek to support and build upon the COA Strategic Plan, exploring opportunities for inclusion of the arts as the City develops.

Historically, the arts organizations in our community have been the City of Fairfax Band and the Fairfax Art League. Over the past two decades, four theater companies have emerged, as well as several smaller performance groups. The range of performances is constrained by the lack of theater spaces.

Public art has also sprouted in the last decade with art at the Library, in front of City Hall, and in front of the Sherwood Center. More is planned for Old Town Square.

Cultural Arts Goal 1

Integrate cultural facilities into the City.

The City currently lacks adequate facilities for performing arts, including a community theater that could provide space for the larger audiences that regional and national artists could bring to the City. Although Fairfax High School and Lanier Middle School have auditorium/theater spaces, theater groups are severely challenged to obtain time in these facilities and are concerned about rental fees. The City must continue to evaluate and expand its cultural venues and to cater to the increasing entertainment expectations of its residents and promote the character and economic vitality of the City, making it a regional arts destination. This should be supported through expanded public art facilities.

OUTCOME CA1.1:	Cultural facilities that provide opportunities for local, regional and national artists to perform for audiences of all sizes.
ACTION CA1.1.1	Create a broad-based special commission charged with the mission of identifying short- and long-term needs for performance spaces and other facilities to support a robust City arts program.
ACTION CA1.1.2	Based on conclusion of CA1.1.1, create a capital program for arts facilities, including a priority for a performing arts facility. This may include upgrading of school arts-related facilities.
ACTION CA1.1.3	Support the creation of Arts and Entertainment Districts with priority to Old Town Fairfax.
ACTION CA1.1.4	Identify underutilized or vacant private facilities that can function as temporary performance spaces.
OUTCOME CA1.2:	Public art such as murals and sculptures displayed to identify, enhance, and promote the cultural nature of the City.
ACTION CA1.2.1	Promote the City's cultural arts identity through public art.
ACTION CA1.2.2	Implement the City of Fairfax Public Art Policy and consider additional policies and practices that promote cultural vitality.
ACTION CA1.2.3	Create a cultural arts bike and pedestrian trail (e.g. Indianapolis Cultural Trail).

Cultural Arts
Goal 2

Encourage a broad representation of arts.

There are a wide variety of interests in arts programs and events resulting from the ever-changing demographics of the City. Strategic partnerships with local institutions, such as George Mason University's Center for the Arts and Northern Virginia Community College's Fine Arts Program should be constantly sought and promoted to expand opportunities for City residents of all ages, ethnicities and abilities. Alternative means of providing and promoting programs must continually be explored as well.

OUTCOME CA2.1:	Collaboration and partnership with local schools, colleges, and universities to provide performance, rehearsal and educational opportunities for artists.
ACTION CA2.1.1	Collaboration and partnerships support establishment of performance, rehearsal and educational opportunities for artists.
ACTION CA2.1.2	Establish a mechanism for continuous collaboration with local schools, colleges, universities and arts organizations on education for artists, and for arts programming.
ACTION CA2.1.3	Explore public-private partnerships to develop performance and rehearsal spaces.
OUTCOME CA2.2:	Cultural programming in the City increases opportunities for a wide range of cultural experiences.
ACTION CA2.2.1	Consider creating a Cultural Affairs office with a full-time director.
ACTION CA2.2.2	Identify and create plan to optimize use of existing and future public facilities for cultural arts programs.
ACTION CA2.2.3	Enhance awareness of current and future programs and facilities.
ACTION CA2.2.4	Develop and execute strategies to increase funds by charging admission to selected events and to increase sponsorships, contributions, and grants.
OUTCOME CA2.3:	Expanded and enhanced partnerships with city businesses and other organizations such as City of Fairfax Schools, Northern Virginia Community College, George Mason University, Virginia Commission for the Arts and other local arts agencies.
ACTION CA2.3.1	Expand partnerships with institutional and business communities for funding and facilities usage.

Government and Public Safety

Guiding Principle:

In 2035, Fairfax is a city with... exceptional governmental, police and fire safety services.

Municipal government services directly affect daily life for residents and businesses including trash pick-up, dog licensing, sign permits, facility rentals, or emergency services. These services not only allow a community to function, but also impact its overall quality of life.

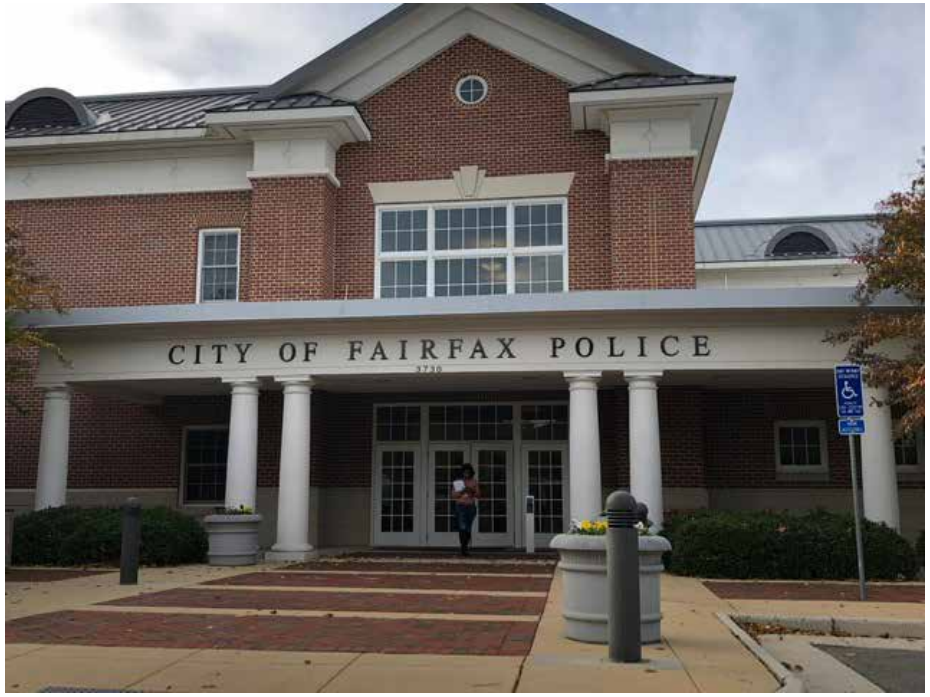
Public safety services include law enforcement, fire protection, emergency medical services and emergency management. The continuity of governmental services offers reassurance that essential services are in place to respond to basic community concerns and needs.

Government and Public Safety Goal 1

Provide state-of-the-art-facilities for local government and public safety operations.

Anticipating future growth patterns and planning for infrastructure and services to meet the needs of such growth are critical elements in determining the future of the City and its development framework. The City's location in the metropolitan Washington, D.C. area promises to provide the stimulus for continued growth. This growth will affect the resources required to provide the desired level of public services, safety response, and protection. The City must continually monitor demands on government and public safety resources in order to determine needs for facility and service enhancements.

OUTCOME GPS1.1:	Public facilities and equipment that properly support the efficient functioning of City staff to provide valued services to City residents and businesses.
ACTION GPS1.1.1	Maintain and update City facilities to ensure all are safe, accessible to individuals of all abilities, energy efficient, and modernized to meet the changing needs of the community and operations.
ACTION GPS1.1.2	Construct new buildings, when warranted, that are accessible, sustainable, and properly located, including co-locating multiple uses to meet the needs of the community and operations.
ACTION GPS1.1.3	Pursue right of first refusal agreement with Fairfax County on County-owned property located within the City.



Government and Public Safety

Goal 2

Provide high-quality community services.

The City must balance fiscal challenges with the need to maintain public facilities and equipment. Improper maintenance and inadequate facilities can result in disruptive needs for repair and costly replacements. The City will provide high-quality, efficient and cost-effective community services with optimal levels of service to meet public needs on a daily basis, as well as during times of stress.

OUTCOME GPS2.1:	User-friendly and convenient customer service tools using the latest technology available.
ACTION GPS2.1.1	Monitor trends and advancements in technology as they become available to determine if they would benefit City staff's ability to deliver services.
OUTCOME GPS2.2:	Police protection and service that maintain a safe environment for residents, workers and visitors.
ACTION GPS2.2.1	Prevent crime through safe environmental design.
ACTION GPS2.2.2	Support the implementation of the Police Department's long-range plans.
OUTCOME GPS2.3:	Responsive fire and rescue services that protect lives and property.
ACTION GPS2.3.1	Support the implementation of the Fire Department's long-range plans.
ACTION GPS2.3.2	Maintain and update City fire facilities and equipment to ensure all are safe, accessible to individuals of all abilities, energy efficient, and modernized to meet the changing needs of the community and staff.
OUTCOME GPS2.4:	Continued coordination and collaboration with appropriate jurisdictions, agencies and groups for emergency preparedness and response.
ACTION GPS2.4.1	Survey assets and expand upon them to best capitalize on investment in preparedness.
ACTION GPS2.4.2	Continue education programs focused on establishing survivable spaces and promoting emergency preparedness.
OUTCOME GPS2.5:	Essential health and human services are readily available for all community members.
ACTION GPS2.5.1	Improve access and availability to health and human services, amenities, and products.
ACTION GPS2.5.2	Increase transit service options available to destinations where healthy food is sold or distributed such as food banks, farmers markets and grocery stores.
ACTION GPS2.5.3	Recognizing many human services are provided by outside agencies and are not directly marketed for the City, develop a marketing strategy targeting individuals in the City who could benefit from those services.

Infrastructure and Utilities

Guiding Principle:

In 2035, Fairfax is a city with… safe, well-maintained infrastructure and use of advanced technology.

Well-maintained infrastructure and utility systems are critical to the City's continued growth and development. The services covered under this Guiding Principle include water, wastewater, stormwater, energy, telecommunications, and solid waste and recycling. These services support existing and future development and contribute to the health, safety and welfare of the community's residents, businesses and visitors. As technology advances, the City will have greater opportunity to expand the use of information and communications technologies to enhance livability, economic growth, public safety and sustainability.

The proper functioning of infrastructure systems can have major environmental implications. Water, wastewater, and stormwater systems are embedded in the region's hydrology, and the quality of our watersheds is heavily influenced by the operation of these systems. Overhead utility wires are a distracting visual element within the streetscape and present a maintenance concern. Trees must be trimmed away from the overhead lines on a regular basis, resulting in odd-shaped and unnatural-looking trees unable to grow to their fullest potential. Undergrounding utilities can enhance safety, improve aesthetics, reduce maintenance, and improve street tree health.

Infrastructure and Utilities

Goal 1

Provide quality utility services and infrastructure systems.

Utilities and infrastructure will be compliant with applicable federal and state standards and requirements to meet anticipated growth and development needs. The City should continue to ensure its infrastructure and utility systems meet the demand of projected growth and the community's needs. Significant investments in infrastructure (such as stormwater management facilities) will be needed to keep pace with maintenance, regulatory requirements and advancing technology.

OUTCOME IU1.1:	Access to a clean, safe and reliable potable water supply.
ACTION IU1.1.1	Continue to work with Fairfax Water to ensure the City has access to safe and reliable drinking water.
ACTION IU1.1.2	Encourage residents and businesses to conserve water in an effort to protect and preserve the water supply.
OUTCOME IU1.2:	A reliable and efficient wastewater system that collects, conveys and treats wastewater.
ACTION IU1.2.1	Maintain the ability to collect and transmit wastewater.
ACTION IU1.2.2	Continue to perform regular testing, maintenance and improvements to the City's wastewater collection system to ensure compliance with federal and state environmental regulations.
OUTCOME IU1.3:	A sustainable and efficient stormwater system.
ACTION IU1.3.1	Continue to implement the Virginia Stormwater Management Program (VSMP) and the City's stormwater management program to ensure compliance with federal and state regulations.
ACTION IU1.3.2	Continue to maintain and improve the City's stormwater system, utilizing green stormwater infrastructure where practical.
OUTCOME IU1.4:	Access to reliable energy and telecommunications infrastructure.
ACTION IU1.4.1	Partner with utility providers, local municipalities, and regional groups to improve access to utility data and service outage data.
ACTION IU1.4.2	Coordinate upgrades and replacement of non-City provided utilities, including electricity, water, natural gas and communications networks.
ACTION IU1.4.3	Work with utilities, developers, and state agencies to relocate above-ground utility lines underground, where feasible, with an emphasis on major corridors.

Infrastructure and Utilities

Goal 1

ACTION IU1.4.4	Encourage the placement and appearance of utility infrastructure (e.g. substations, transmission towers and lines, and switching boxes) to minimize visual disruption and negative effects on quality of life, and to enhance streetscapes.
ACTION IU1.4.5	Work with utility companies to ensure the reliability and availability of electricity, water, natural gas, and communications services during both normal times and times of stress (e.g. storm events, flooding, extreme heat, etc.).
OUTCOME IU1.5:	A safe and well-connected right-of-way system that provides a functional surface transportation system and utility infrastructure services throughout the City.
ACTION IU1.5.1	Evaluate and ensure that there is adequate lighting along all major streets.
ACTION IU1.5.2	Convert light fixtures and street lights to light emitting diodes (LEDs) and down-cast lighting.
ACTION IU1.5.3	Develop an inventory of existing public right-of-way infrastructure assets (e.g., street lights), current infrastructure conditions, and priorities for maintenance or rehabilitation.
ACTION IU1.5.4	Provide rights-of-way that will permit the expansion of tree planting strips and tree wells to provide more suitable growing conditions for street trees.
OUTCOME IU1.6:	Access to reliable and efficient solid waste and recycling services and infrastructure.
ACTION IU1.6.1	Maintain and enhance solid waste and recycling infrastructure in City parks, trails, sidewalks, and public facilities, and at events.

Infrastructure and Utilities

Goal 2

Expand the use of advanced technology.

Advanced technology infrastructure helps support economic growth and public safety, improve access to information, and ensure a broad range of communications services. Technology is rapidly progressing while the price of these advanced technologies is decreasing. The City will monitor, evaluate, and utilize advances in technology to improve efficiency, connectivity and quality of life.

OUTCOME IU2.1:	All City residences, businesses and institutions have access to reliable and affordable advanced technology and telecommunications infrastructure and services.
ACTION IU2.1.1	Periodically update policies and regulations for the design and siting of telecommunications facilities to ensure they remain applicable with fast-changing technologies.
ACTION IU2.1.2	Explore public-private partnerships as a way to enhance the City's telecommunications infrastructure.
ACTION IU2.1.3	Consider implementing innovative pilot initiatives that advance new technologies (e.g., regenerative power, solar-powered charging stations, etc.).

Appendices

Appendix A: Chesapeake Bay Preservation Plan

Appendix B: Transportation Practices and Policy

A Chesapeake Bay Preservation Plan

The City recognizes the importance of preserving its valuable water resources for future generations and the need to protect them from the adverse effects of pollution generated by urban land uses. The City also recognizes that land use activities adversely affecting City streams also impact the health and viability of downstream resources, the most important of which is the Chesapeake Bay. The Chesapeake Bay is an economic, social, and ecological resource whose continued health is of benefit to all citizens of the Commonwealth.

The City of Fairfax has a vested interest and a responsibility to maintain and promote a healthy environment, including the protection of local waterways from further degradation as a result of development. In addition, steps must be taken to improve currently degraded resources to ensure the long-term health of both the City's resources and the Chesapeake Bay. The City has risen to the challenge of natural resources and water quality protection and is committed to implementing the Chesapeake Bay Preservation Area Designation and Management Regulations as manifest by the Chesapeake Bay Preservation Act of 1988. These regulations apply to all localities within Tidewater Virginia; however, the individual jurisdictions are responsible for identifying and implementing Chesapeake Bay preservation strategies.

The City has made progress towards maintaining and promoting a healthy environment; nonetheless, significant environmental issues still need to be addressed. This Chesapeake Bay Preservation component to the City's Comprehensive Plan serves as a planning tool for the City Council, the Planning Commission, City agencies, and citizens to help guide the City in its protection of the Chesapeake Bay and the City's natural resources.

Contents

Section 1. Introduction, Purpose, and Legal Authority

Recognizing the economic and social importance of long-term viability of State waters, and in particular the Chesapeake Bay and its tributaries, the Virginia General Assembly enacted the Chesapeake Bay Preservation Act of 1988. The Chesapeake Bay Preservation Area Designation and Management Regulations as adopted in 1989 and amended in 1991, 2001, and in 2012, state that local programs shall contain "a comprehensive plan or revision that incorporates the protection of Chesapeake Bay Preservation Areas and of the quality of state waters, in accordance with criteria set forth in Part V (9VAC25-830-160 et seq.)."

The waters of the Chesapeake Bay have been degraded significantly by many sources of pollution, including nonpoint source pollution from land uses and development. Existing high-quality waters are worthy of protection from degradation to guard against further pollution. Certain lands that are proximate to shorelines have intrinsic water quality value due to the ecological and biological processes that they perform. Other lands have severe development constraints as a result of flooding, erosion, and soil limitations. With proper management, they offer significant ecological benefits by providing water quality maintenance and pollution control, as well as flood and shoreline erosion control.

To achieve these ends, the City Council and the Planning Commission have, in accordance with the Chesapeake Bay Preservation Area Designation and Management Regulations (9VAC25-830), developed a Chesapeake Bay preservation program which is centered around the City's Chesapeake Bay Preservation regulation of the Zoning Ordinance. This Chesapeake Bay Preservation component to the City's Comprehensive Plan builds upon the City's regulation and is designed to protect those qualities of life held important by the citizens of the Commonwealth and the City and to encourage future development that enhances and compliments the growth of the City as well as protects it natural resources.

Section 2. Water Resources Protection Programs and Regulations

The City has made substantial progress towards ensuring the protection and balanced management of its natural resources through the implementation of various City regulations and water quality protection and pollution prevention programs. While the Chesapeake Bay Preservation regulation is the City's primary tool for protecting water resources within the City, water quality and natural resources protection requires an integrated approach.

This involves not only regulation but also citizen participation through the use of public education and volunteer programs. Enforcement of the City's Chesapeake Bay Preservation regulation must be coupled with a comprehensive examination of how the City's various land use regulations, including its Zoning and Subdivision ordinances, may be better utilized to protect the natural environment.

The following is an overview of the City's existing regulations and programs related to water quality and natural resources protection. These regulations and programs are then reexamined and options are presented for their improvement in light of an analysis of the City's water resources (Section 3), existing and potential sources of pollution (Section 4), and constraints to development (Section 5).

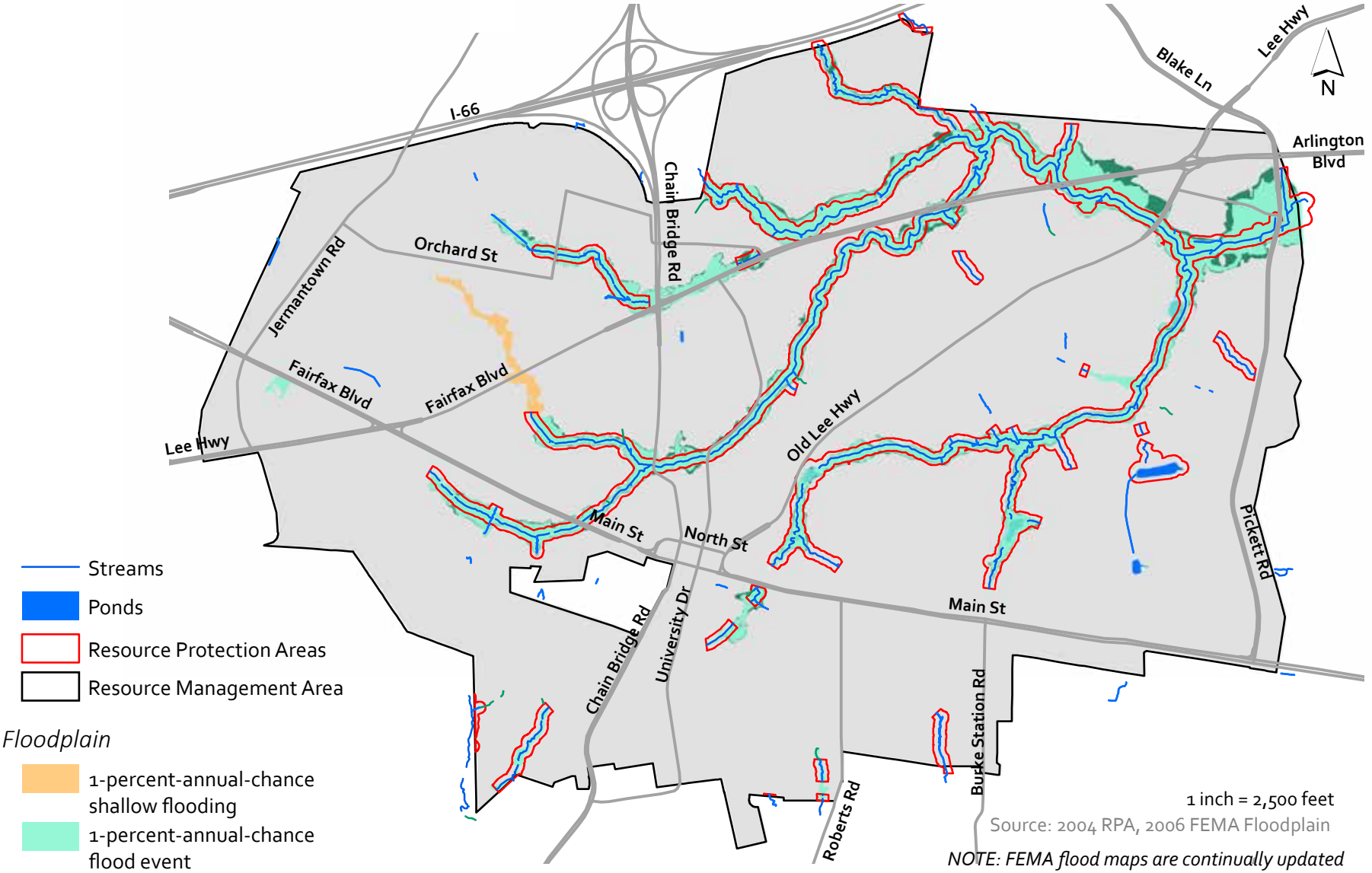
2.1. Chesapeake Bay Preservation Regulation

The Chesapeake Bay Preservation Act (Chapter 3.1 of Title 62.1 of the Code of Virginia) establishes a program to protect environmentally sensitive features which, when disturbed or developed incorrectly, lead to reductions in water quality in the Chesapeake Bay. The Act provides a framework for local government to identify these sensitive areas and to enact regulations to better plan land use activities on and around them. Under the regulations, the City of Fairfax is called to promote the following:

- Protection of existing high quality State waters and restoration of all other State waters to a condition or quality that will permit all reasonable public uses, and will support the propagation and growth of all aquatic life which might reasonably be expected to inhabit them;
- Safeguarding the clean waters of the Commonwealth from pollution;
- Prevention of any increase in pollution;
- Reduction of existing pollution; and,
- Promotion of water resource conservation in order to provide for the health, safety, and welfare of the present and future citizens of the Commonwealth.

In accordance with State guidelines, Chesapeake Bay Preservation Areas (CBPAs) were mapped for the City and the City adopted a Chesapeake Bay preservation area map as part of the City's Zoning Ordinance in October, 1990 and was most recently amended in March, 2015 (§4.18. et seq.). The Chesapeake Bay Preservation Areas were delineated for the city according to criteria established by the State Department of Conservation and Recreation. Figure A1 presents the City's Floodplain and Chesapeake Bay Preservation Area Map.

FIGURE A1 FLOODPLAIN AND CHESAPEAKE BAY PRESERVATION AREA MAP



NOTE: FEMA flood maps are continually updated through a variety of processes. The RPA does not change without design modifications.

The resource protection area (RPA) includes (1) tidal wetlands; (2) nontidal wetlands connected by surface flow and contiguous to tidal wetlands or water bodies with perennial flow; (3) tidal shores; (4) intermittent streams that remain largely in a natural condition and that have not been significantly impacted by adjacent development; (5) water bodies with perennial flow; and (6) a 100-foot vegetated buffer area located adjacent to and landward of the components listed above, and expanded to include noncontiguous wetlands within the floodplain that are partially located within the buffer, along both sides of any water body with perennial flow.

In general, development within the RPA is limited to water dependent uses, passive recreational uses, utilities and public facilities, and certain types of redevelopment so long as the proposed land use is carried out in accordance with the provisions of the City's Zoning Ordinance.

The resource management area (RMA) includes all lands in the city that are not designated as an RPA. All development or redevelopment within a Chesapeake Bay preservation area exceeding 2,500 square feet of disturbed land area shall be subject to the general performance standards in §4.18.7 of the Zoning Ordinance as well as the development review procedures of §6.13 of the Zoning Ordinance.

The performance standards establish the means to minimize erosion and sedimentation potential, reduce land application of nutrients and toxics, and maximize rainwater infiltration. Natural ground cover, especially woody vegetation, is most effective in holding soil in place and preventing site erosion. Indigenous vegetation, with its adaptability to local conditions without the use of harmful fertilizers or pesticides, filters stormwater runoff. Minimizing impervious cover enhances rainwater infiltration and effectively reduces stormwater runoff potential.

The performance standards are intended to prevent a net increase in nonpoint source pollution from new development and to achieve a 10 percent reduction in nonpoint source pollution from redevelopment.

2.2. Erosion and Sediment Control Regulation

The purpose of the City's Erosion and Sediment Control Regulation is to prevent the degradation of properties, stream channels, waters, and other natural resources by providing that adequate soil erosion and sediment control measures are taken before, during, and after the period of site clearance, development, and construction. The Erosion and Sediment Control Ordinance implements the Virginia Erosion and Sediment Control Law (§ 62.1-44.15:51 et seq of the Code of Virginia (2013)) as well as the Chesapeake Bay Preservation Act.

Under this ordinance, land owners proposing a nonexempt regulated land disturbing activity of greater than 2,500 square feet must first submit an erosion and sediment control plan to the City Department of Public Works. The City's erosion and sediment control requirements are detailed in Erosion and Sediment Control section of the Zoning Ordinance (§4.17).

2.3. Landscaping Regulation

The City's landscaping regulations are intended to encourage the planting and proper care of vegetation and trees throughout the City, to enhance tree canopy, and to provide for appropriate screening. These actions are intended to contribute to the health, safety, and welfare of the city by enhancing pedestrian facilities, decreasing flooding, soil erosion, air pollution and noise, and improving aesthetics.

The regulation controls the removal of trees from public and private property and establishes standards limiting tree removal and ensuring the replacement of trees sufficient to safeguard the ecological and aesthetic integrity of the community's environment. In addition, the regulation was enacted: to prevent the unnecessary clearing and disturbing of land so as to preserve, insofar as is practicable, the natural and existing growth of vegetation; to replace the removed trees with new trees or large shrubs on the same property and in the same general location; to provide protective regulations against hazardous trees and diseased trees or shrubs; to control activities related to trees and plantings upon the streets or public properties of the City; and to establish a permit procedure for tree contractors. The City's landscaping requirements are detailed in the landscape section of the Zoning Ordinance (§4.5).

Tree cover has long been recognized as serving to protect water quality. Tree canopy provides a buffer between precipitation and the soil by slowing the rate and velocity of rainfall.

Tree roots serve to keep soil particles in place and from washing away due to rainfall. Vegetation of all types also extract nutrients from water for use in plant tissues. In addition, tree cover in riparian areas serves to protect aquatic habitat by lowering and stabilizing stream temperature.

2.4. Floodplain Regulation

In 1981, the Federal Emergency Management Agency (FEMA) investigated the existence and severity of flood hazards in the City of Fairfax to aid in the administration of the National Flood Insurance Act of 1968 and the Flood Disaster Protection Act of 1973. The study was also meant to be used by local and regional planners in their efforts to promote sound floodplain management. To these ends, the City established a floodplain district as part of the City's Zoning Ordinance in 1982, which has been continually updated. The current Floodplain regulation was adopted by the City in March 2015.

The purpose of the City's floodplain regulation is to prevent the loss of life and property, the creation of health and safety hazards, the disruption of commerce and governmental services and the extraordinary and unnecessary expenditure of public funds for flood protection and relief, and the impairment of the tax base by:

- Regulating uses, activities, and development which, alone or in combination with their existing or future uses, activities, and development, will cause unacceptable increases in flood heights, velocities, and frequencies.
- Restricting or prohibiting certain uses, activities, and development from locating within districts subject to flooding.
- Requiring all those uses, activities, and developments that do occur in flood-prone districts to be protected and/or flood proofed against flooding and flood damage.
- Protecting individuals from buying land and structures which are unsuited for intended purposes because of flood hazards.

In addition to protecting life and property, the floodplain regulation serves to protect water quality by decreasing the potential for stream bank erosion and by providing, in many instances, vegetated stream buffer areas which filter runoff from surrounding impervious areas. Figure A1 on page 3 depicts areas of Fairfax that have been designated as flood prone (the one-hundred year floodplain) for which the City's regulation applies. The City's floodplain regulations are detailed in §4.15 of the Zoning Ordinance.

2.5. Zoning and Subdivision Ordinances

The City's Zoning and Subdivision ordinances provide the City with valuable tools for natural resources protection through better development and redevelopment practices. Many of the City's water quality protection regulations, including the City's Chesapeake Bay Preservation regulation and Floodplain regulation are contained within the City's Zoning Ordinance as overlay districts. Protection of water resources may be accomplished through the application of Zoning Ordinance provisions which relate to impervious coverage requirements, land use densities, etc. For instance, creative parking requirements to minimize impervious areas, including cooperative parking arrangements between businesses, may be used to minimize impervious cover.

2.6. City Source Control Programs

The control of pollutants before they enter stormwater or groundwater is recognized as the most cost effective and environmentally sound method of environmental protection. While the effectiveness of source control programs are difficult to ascertain due to their heavy reliance on human behavior modification, they are nevertheless integral components of the Commonwealth's Chesapeake Bay preservation effort. The City has addressed source control on a number of fronts, many of which are specifically geared at water quality protection and some of which have water quality protection as direct benefit. Among the City's source control programs which benefit water quality are its street sweeping program, curbside leaf and brush pickup service, and recycling program.

Street sweeping is effective in removing harmful pollutants, particularly litter and sand from deicing and snow removal activities. Under the City's street sweeping program, main streets are swept once a week from mid-March through mid-November and subdivision streets are swept three times a year. In order for the City's program to have a more substantial effect on water quality, more frequent and concentrated street sweeping would need to be implemented. Specifically, more intense street sweeping efforts in downtown areas, where nutrients and other pollutants tend to accumulate at higher rates, may be of direct benefit to water quality.

In addition to street sweeping, the City conducts a curbside leaf and brush pickup service which discourages those whose properties lie within a RPA from dumping yard waste near streams where it can kill vegetation. This practice can result in erosion and the leaching of excess nutrients into the local stream. In conducting its program, the City should take care to make sure that leaves are not placed directly in the gutter where they can be washed into the local stream course.

The City has an extensive recycling program which has collections for most recycling materials including plastics, glass, metals, etc. The City also collects potentially hazardous substances such as used oil, oil filters, rechargeable batteries, and car batteries at the Property Yard Recycling Center. The City advertises its recycling program in the Public Works Department's insert to the City's monthly newsletter several times a year. New

homeowners are provided with a packet of information on recycling requirements and facilities within the City.

In addition to City source control efforts, the Department of Environmental Quality (DEQ), Water Division, works directly with owners of underground storage tanks (USTs) to ensure that these tanks do not impact on groundwater quality. The DEQ, Water Division, has an extensive monitoring program to detect and mitigate any leaking USTs before substantial groundwater quality degradation can occur.

2.7. Local and Regional Watershed Management Efforts

For many years, the City's stormwater drainage system has been under considerable stress as the result of a rapid increase in the City's jurisdiction-wide imperviousness. Several types of stormwater system problems have been identified within the Accotink Creek watershed including streambank and streambed erosion, sedimentation, localized flooding, deteriorated drainage facilities, limited capacity of the drainage system as originally designed, and finally, pollutants affecting water quality.

In the last few decades, several water quality related regulations, as summarized below, have been enacted that has made it necessary for the City to investigate and address these problems on a watershed-wide basis.

- **National Pollution Discharge Elimination System:** Established by the United States Environmental Protection Agency (EPA) in 1987 as an amendment to the Clean Water Act, the National Pollution Discharge Elimination System requires permits for discharges from municipal separate storm sewer systems to limit pollutant discharges into streams, rivers, and bays. The DEQ administers the program as the Virginia Pollutant Discharge Elimination System.
- **Chesapeake Bay Preservation Act:** Established by the DEQ in 1988 to improve water quality in the Chesapeake Bay. Localities are required to adopt programs to protect water quality in the Chesapeake Bay from excessive nutrients caused by stormwater runoff from impervious surfaces.
- **Virginia Stormwater Management Program:** These regulations were established by the DEQ and include requirements for erosion and sediment control during the construction process and for the installation of BMPs to address stormwater runoff post-construction.
- **MS4 Permits:** Issued by the DEQ and EPA, these regulatory permits require local governments to implement a variety of programs (ranging from detection and correction of illicit discharges to public outreach and education) to lessen the volume of pollutants carried by their municipal stormwater conveyance systems. These permits require consistency with the pollution budgets of applicable total maximum daily loads (TMDLs); and have been issued over time.
- **Local TMDL:** Established by the DEQ and EPA, these TMDLs set target reductions for pollutants (nutrients, sediment, bacteria, trash, and PCBs) in a number of waters in the region that have been designated as 'impaired'.

- **Chesapeake Bay TMDL:** Established by the EPA in December 2010, this historic and comprehensive "pollution diet" requires reductions in nutrient (nitrogen and phosphorus) and sediment pollution throughout the Chesapeake Bay watershed and for major tributaries such as the Potomac River.

To determine how the City will face its watershed challenges, the City completed a Watershed Management Plan in July 2005. The plan evaluated watershed conditions and included recommendations on how to improve watershed health. The City also completed an Accotink Creek Stream Stability Assessment and Prioritization Plan in October 2007 and a supplement report for Daniels Run in October 2008. These reports captured the scale and extent of stream bank erosion in the Accotink Creek watershed and included a prioritization plan for future restoration activities based upon observed conditions.

The City has been continually implementing the recommendations identified in these reports. For example, the City has made significant efforts to stabilize the stream banks to handle the urban stormwater runoff and flows by implementing stream restoration and stabilization improvements at numerous locations on Accotink Creek.

The City also participates in regional efforts by being a member of the Chesapeake Bay Policy Committee, which was established by the MWCOG Board of Directors. Elected officials and staff from MWCOG's member governments, and water and wastewater utilities comprise the committee's membership. The Committee tracks developments under the federal-state Chesapeake Bay Program for implications to local governments and recommends Bay-related policies to the Board.

On June 16, 2014, the Chesapeake Bay Watershed Agreement was signed. Signatories include representatives from the entire watershed, including the Commonwealth of Virginia, committing for the first time the Chesapeake Bay's headwater states to full partnership in the Chesapeake Bay Program. This plan for collaboration across the Bay's political boundaries establishes goals and outcomes for the restoration of the Bay, its tributaries and the lands that surround them.

Section 3. Inventory of Existing Water Resources

The City contains a wealth of natural resources which benefit both residents and businesses within the City. Of its natural resources, the City's water resources are among the most important from an economic, social, and ecological point of view, as well as the most sensitive. Land uses and development, air pollution, and human carelessness all contribute to the degradation of water resources.

The City has been able to protect many stream corridors through the expansion of its public park system and the preservation of vegetative buffers. However, as the population grew from only 1,946 in 1950 to 24,097 in 2017, development pressures resulted in a dramatic increase in the City's impervious acreage and a loss of natural vegetation. While past responses to the pressures of development have resulted in the implementation of erosion and sediment control measures, stormwater quantity measures to control flooding, and floodplain protection, only recently have the post-development effects of urbanization on water quality been fully appreciated and addressed.

With the adoption of the City's Chesapeake Bay Preservation regulation in 1990, the City committed itself to a comprehensive and integrated approach to water quality protection. In order to better plan for future development and redevelopment within the City and to identify ways to enhance the quality of life through the preservation and restoration of the City's water resources, it is important to understand the resources which exist within the City. The following section presents an inventory of the water resources within the City including watersheds and streams, water supplies, water supply protection, and groundwater.

3.1. Streams and Watersheds

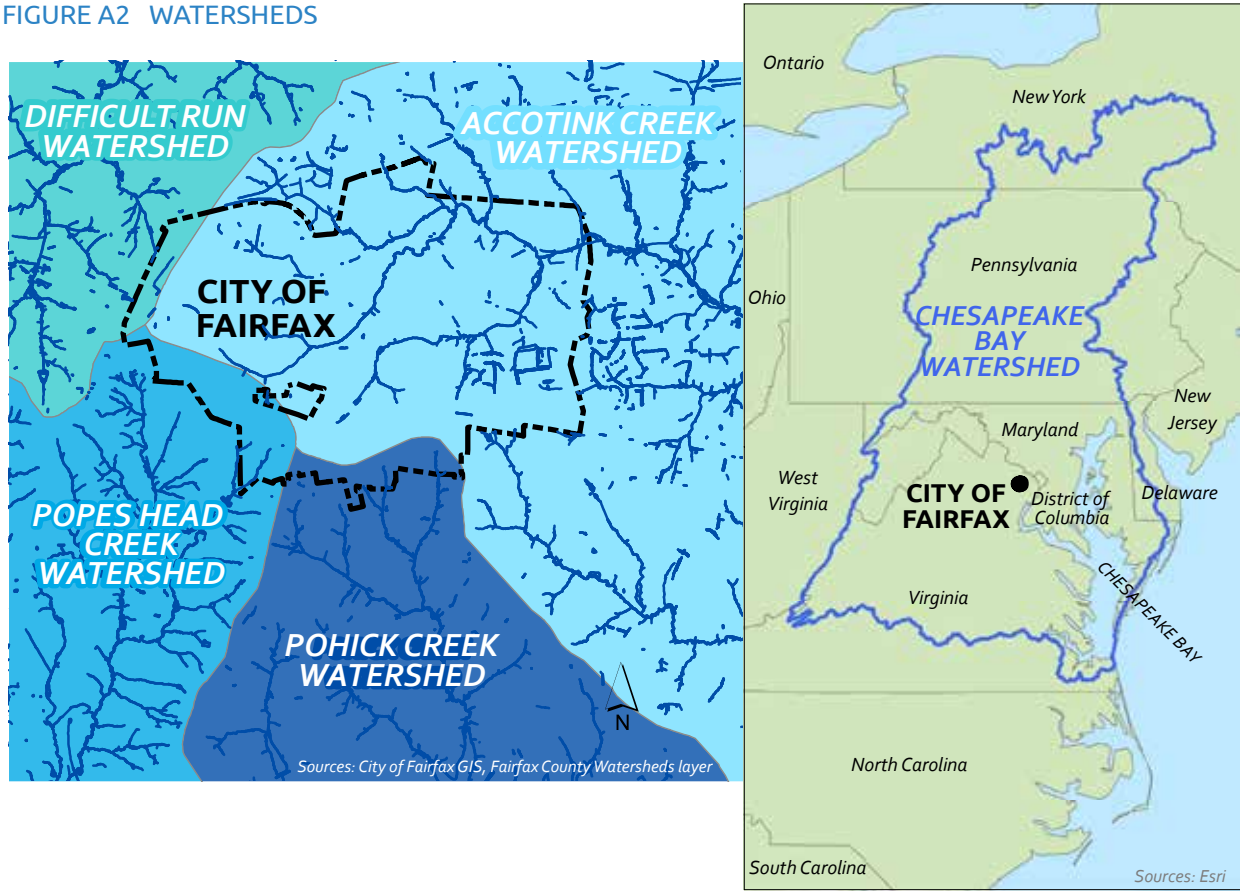
The City is located at the confluence of four major drainage divides and includes portions of the Accotink Creek, Pohick Creek, Popes Head Creek, and Difficult Run watersheds. As a unique consequence, practically all watercourses within the City (with the exception of a few tributaries to Accotink Creek in the northeastern portion of the City) originate within its boundaries and are not directly affected by activities from neighboring jurisdictions. This provides a considerable level of control to the City over the water quality of its streams. Major perennial streams which flow through the City include Accotink Creek (north and central forks) and Daniels Run (also known as the south fork of Accotink Creek), which drains to Accotink Creek within the City. Many smaller tributaries drain to Accotink Creek and Daniels Run in a roughly dendritic (branched) pattern which has been substantially modified by development and channelization.

The City contains the headwaters of Accotink Creek, which flows through southern Fairfax County and empties into Accotink Bay and Gunston Cove and then into the Potomac River. Within the City, Accotink Creek is primarily a gravelly bottomed fast flowing stream. However, in some wide, shallow, or slower moving areas, particularly in areas upstream of culverts, thick layers of sediments have been deposited over the gravel as a result of excessive erosion and both natural and man-made stream course blockage. Throughout much of the City, Accotink Creek is only five to ten feet wide and relatively shallow. However, the creek widens to ten to twenty-five feet and is several feet deep where it exits

the northeastern edge of the City near the intersection of Pickett Road and Old Pickett Road in Thaiss Park.

According to the Division of Soil and Water Conservation's Hydrologic Units Map of Northern Virginia, the City lies primarily within the Accotink Creek watershed (HUC Code: 020700100402) which drains approximately 90% of the City. The Pohick Creek watershed (HUC Code: 020700100401), which drains the southeastern portion of the City covers approximately 3% of the City. The Difficult Run watershed (HUC Code: 02070081004), which drains the area west of Jermantown Road, covers approximately 3% of the City while the Popes Head Creek watershed (HUC Code: 020700100705), which drains the southwestern portion of the City, covers approximately 4% of the City. Popes Head Creek flows through south-central Fairfax County, bisecting the Town of Clifton, and eventually empties into the Occoquan Reservoir. This is significant due to the fact that the Occoquan serves as a primary drinking water supply for a large percentage Northern Virginians. Figure A2 presents a schematic of the City's major watersheds. Figure A3 presents a schematic of the major streams within the City.

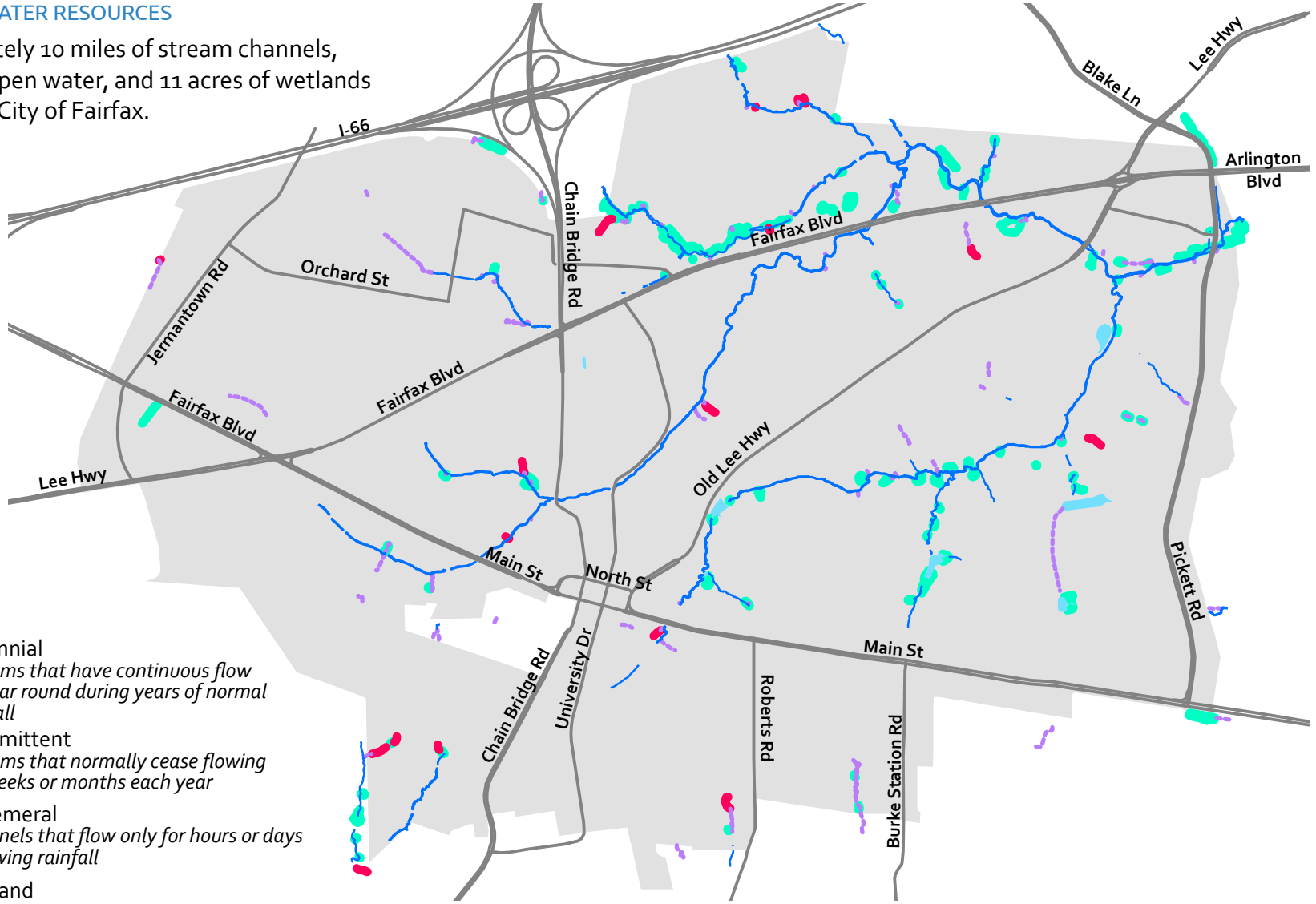
FIGURE A2 WATERSHEDS



Tributary streams within the City are subject to runoff from shopping centers, garages, parking lots, and other potentially high pollution areas. Storm drains feed the majority of the streams passing through the City and have been implicated as sources of pollution from improperly disposed petroleum products. Although many tributaries have been cleared to their banks, or have been modified to enhance drainage capacity, only a relatively small proportion of the City's perennial streams have actually been piped or channelized with concrete. The implications that the City's land uses, impervious cover, and human activities have on water quality are further detailed in Section 4.

FIGURE A3 WATER RESOURCES

Approximately 10 miles of stream channels, 9 acres of open water, and 11 acres of wetlands exist in the City of Fairfax.



Perennial
Streams that have continuous flow all year round during years of normal rainfall

Intermittent
Streams that normally cease flowing for weeks or months each year

Ephemeral
Channels that flow only for hours or days following rainfall

Wetland
Land area that is saturated with water, either permanently or seasonally

Pond
A body of standing water (either natural or artificial)

1 inch = 2,500 feet

Source: City of Fairfax GIS , Watershed Management Plan, July 2005 and the Accotink Creek Stream Stability Assessment and Prioritization Plan, 2008; Stream Assessment/Mapping and Chesapeake Bay Preservation Area Mapping Project, 2003

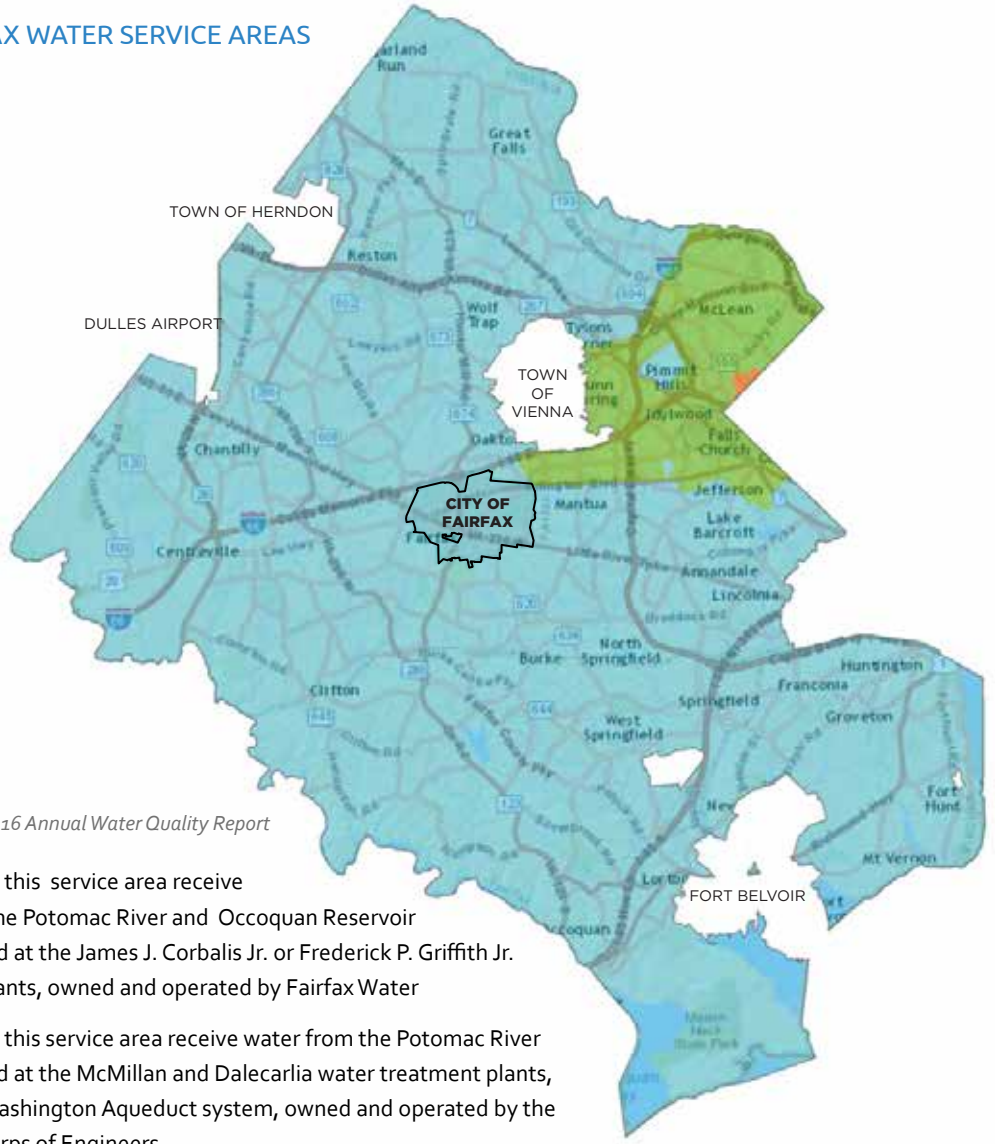
3.2. Water Supply

The City sold its water system to Fairfax Water on January 2, 2014. Since that sale, Fairfax Water has been providing water services to the City as presented on Figure A4.

Per the Fairfax Water Strategic Plan 2020, "Fairfax Water owns and operates the two largest water treatment facilities in Virginia with an average daily water production of 163 million gallons and combined maximum capacity of 376 million gallons per day. The James J. Corbalis Jr. treatment plant is at the northern tip of Fairfax County and the Frederick P. Griffith Jr. treatment plant is on the southern border of Fairfax County. Fairfax Water also purchases water from the McMillan and Dalecarlia treatment plants in Washington DC. They are part of the Washington Aqueduct, owned and operated by the U.S. Army Corps of Engineers. Fairfax Water draws raw water from two primary sources: the Potomac River and the Occoquan Reservoir, which is fed by the Occoquan River."

The principal source of potable water for the City is the Potomac River and Occoquan Reservoir that is treated at the James J. Corbalis Jr. or Frederick P. Griffith Jr. treatment plants. Fairfax Water continually works to reliably meet the needs of present and future

FIGURE A4 FAIRFAX WATER SERVICE AREAS



Source: Fairfax Water 2016 Annual Water Quality Report

Customers in this service area receive water from the Potomac River and Occoquan Reservoir that is treated at the James J. Corbalis Jr. or Frederick P. Griffith Jr. treatment plants, owned and operated by Fairfax Water

Customers in this service area receive water from the Potomac River that is treated at the McMillan and Dalecarlia water treatment plants, part of the Washington Aqueduct system, owned and operated by the U.S. Army Corps of Engineers

Customers in this service area receive water from the Potomac River that is treated at the Dalecarlia water treatment plant, part of the Washington Aqueduct system, owned and operated by the U.S. Army Corps of Engineers

customers. The City will continue to work with Fairfax Water to ensure the City has access to safe and reliable drinking water.

In compliance with federal Safe Drinking Water Act, the Virginia Department of Health (VDH) conducts source-water assessments, which consist of figures of the evaluated watershed area, an inventory of known land-use activities, and documentation of known source-water contamination. The Potomac River and the Occoquan Reservoir were determined to be of high susceptibility to contamination.

In addition to protecting the City's water supply from pollution, water conservation practices help conserve and protect it from depletion. Conservation also reduces the amount of potable water that reaches the City's sanitary sewer system and reduces the potential that landscape irrigation and car washing will result in water pollution. The City should develop a program to encourage City residents on a more regular basis to practice water conservation, including the voluntary replacement of water-intensive (or leaky) fixtures in the home with new low consumption fixtures. Incorporation of water conservation into the school curriculum is also an effective approach and has been used elsewhere in Northern Virginia, including Arlington County.

3.3. Water Quality Monitoring

Protecting the quality of surface water resources is a concern for many urban jurisdictions. The removal of tree canopy cover, which serves to stabilize and cool stream temperatures, as well as increased imperviousness of surrounding areas, which increases the volume and velocity of stormwater runoff into local streams, have a generally negative effect on stream water quality. Water quality may be decreased as a result of pesticide and fertilizer-laden runoff from adjacent lawns or by runoff from parking lots which may contain nutrients, heavy metals, and hydrocarbons. Eroding stream banks contribute to urban water quality problems by choking local streams with sediment. Illegal dumping into storm sewers, trash and litter, animal and pet wastes, and leaking above ground and underground storage tanks also take their toll on urban water quality.

The City's established Water Quality Monitoring Program (WQMP) helps the City meet the requirements contained in Section I.B.2.e of the City's Municipal Separate Storm Sewer System (MS4) permit, and Item 9 in the City of Fairfax's DEQ approved TMDL Action Plans. It was designed to assist in assessing the effectiveness of all the City's Local TMDL Action Plans. Under the program, the City collects water quality samples which are analyzed for water quality parameters including Total Suspended Solids (TSS), Bacteria (E. coli), temperature, specific conductance, Dissolved Oxygen (DO), pH, turbidity, nitrate + nitrite, total phosphorus, and volatile suspended solids. Samples are collected twice a year from six representative MS4 outfalls located within the drainage sheds of the impaired reaches of Difficult Run, Accotink Creek, and Popes Head Creek.

The City utilizes the water quality sampling data to address multiple objectives including: screening for potential sources of the pollutants of concern discharging into the City's MS4; targeting locations within the MS4 permit area for implementation of BMPs; educating the public on the potential water quality impacts of their actions and behavior within the MS4 drainage area; and ultimately to aid in assessing the overall effectiveness of the Action Plan in reducing the discharge of the pollutants of concern from the City's MS4.

At the end of each MS4 permit reporting period, the City prepares annual Water Quality Monitoring Reports, which are included with the City's MS4 Annual Report. Once appropriate amounts of sampling data have

been collected under the WQMP, the City will analyze the results to determine the next steps to take with the MS4 Permit Program and local TMDL Action Plans.

3.4. Groundwater Resources

While the City no longer relies on groundwater resources for its potable water supply, groundwater is nonetheless an important water resource. An investigation of the groundwater resources of the City is important because groundwater is intimately connected with the ecosystem as it provides the base flow to many rivers, streams, ponds, lakes, and wetlands. Groundwater is also an issue of regional importance due to its dynamic nature, as was shown when a leaking oil storage tank at the Fairfax Tank Farm formed a plume which spread from the eastern edge of the City into the Mantua neighborhood of Fairfax County. Because the City no longer relies on groundwater for its potable water supply, recent data on City-wide groundwater dynamics and quality is not available.

Section 4. Existing and Potential Sources of Water Pollution

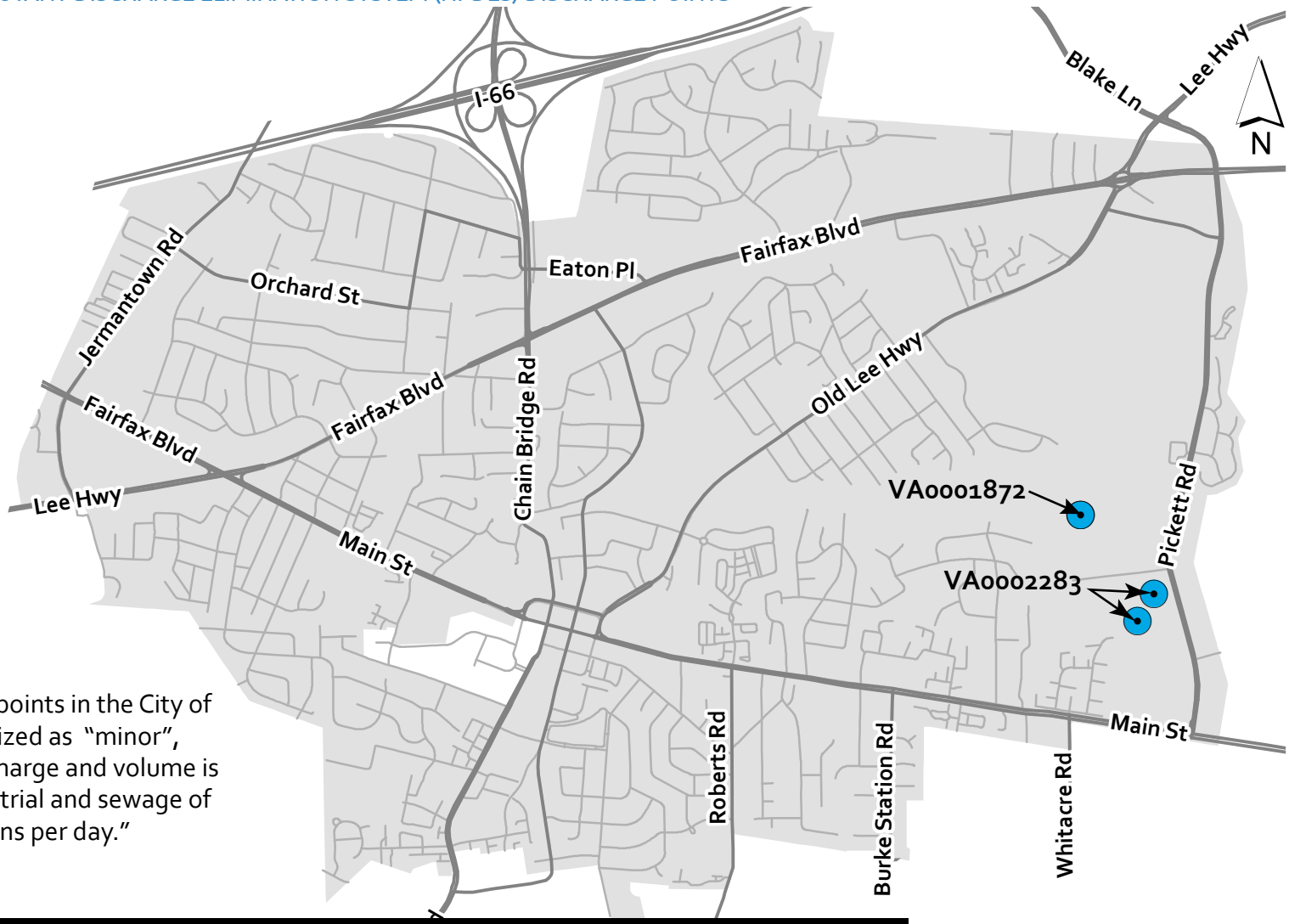
While some level of environmental pollution resulting from human activity may be inevitable, the cost of pollution and its effects on quality of life should not be ignored. Unmanaged pollution can result in surface and groundwater contamination, poor air quality, aesthetic degradation of the landscape, and the destruction of important ecological habitats, all of which detract from the City's basic character. The most cost-effective approach to the problem of pollution is to prevent it at its source. A number of tools are available to the City to aid in pollution prevention, including public education and awareness programs, water conservation, lawn care programs, and recycling efforts, to name only a few. The cost to the City once environmental damage is done includes not only short term clean-up costs, but long-term costs including decreased property values and loss of tax base. The following section describes the City's existing sources of pollution as well as potential sources of pollution which the City may face as it grows and develops.

4.1. Point Source Pollution

Point source pollution is pollution which can be attributed to a specific outfall and is therefore often the most easily recognizable and regulatable form of pollution. Industries and municipalities, under the federal Clean Water Act, National Pollution Discharge Elimination System, are required to report pollution discharges to water courses above a certain threshold, and to the maximum extent practicable, mitigate the effects of the pollution on the environment. The DEQ, Water Division, maintains records on these sources of pollution and is charged with ensuring that environmental regulations are enforced.

There are two National Pollution Discharge Elimination System discharge points located within the City (VA0001872 and VA0002283), both of which drain to tributaries of Accotink Creek (see Figure A5). The discharge points are associated with ongoing activities at the Fairfax Tank Farm Terminal Complex located on Colonial Avenue. The City's water quality is not affected by any upstream point source discharges from surrounding Fairfax County or other jurisdictions. There are currently no municipal discharge points on property owned by the City which fall under the National Pollution Discharge Elimination System

FIGURE A5 NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) DISCHARGE POINTS



VPDES Outfall
Individual Permit

There are two discharge points in the City of Fairfax. Both are categorized as "minor", meaning the type of discharge and volume is "commercial, small industrial and sewage of less than 1.0 million gallons per day."

Permit Number	Facility	Address	Permit Expiration
VA0001872	Joint Basin Corporation - Fairfax Terminal Complex	9601 Colonial Ave	11/30/2020
VA0002283	Motiva Enterprises LLC - Fairfax	3800 Pickett Rd	7/25/2018

1 inch = 2,500 feet

Source: Virginia Department of Environmental Quality (DEQ) Virginia Environmental Geographic Systems (VEGIS), Accessed March 12, 2018

regulations. Stormwater runoff, which is considered nonpoint source pollution, unless piped, is further discussed under Section 4.2.

4.2. Nonpoint Source Pollution

Nonpoint source pollution is pollution which cannot be attributed to a single source but is the result of many diffuse sources. Considered singularly, each small source would not constitute a problem, but together these nonpoint sources constitute a substantial threat to water quality. Most commonly, nonpoint source pollution is caused by rainfall running off roadways, parking lots, roof tops, and other urban land uses. Urbanization increases the imperviousness of a land area, thereby increasing the amount and velocity of stormwater runoff delivered to nearby streams. Pollutants which would normally settle out or infiltrate through the soil are carried directly to local waterways. On a per acre basis, urban land use including residential development generally produces higher annual nonpoint source pollutant loadings of nutrients, heavy metals, and oxygen-depleting substances than do rural agricultural uses. Oil contamination, sediments, pesticides, metals, and other toxic substances can kill fish and destroy bottom life. In addition to transporting pollution, increased runoff also increases instream flow during and immediately after periods of precipitation. This results in increased soil erosion and the destruction of wildlife habitat.

The effect on local waterways is a general degradation of water quality and a phenomenon known as eutrophication. Eutrophic conditions, caused by excessive nutrients in the water, are characterized by low dissolved oxygen levels and high algal growth. The primary detrimental effect on water resources, particularly on large bodies of water such as the Potomac River and the Chesapeake Bay, is algal blooms, which block sunlight from aquatic life and deplete the dissolved oxygen content during decay. Eutrophication also destroys the recreational use of water resources and results in strong odor and undesirable taste.

Because the City lies within the Tidewater area of Virginia, which has a significant impact on the health of the Chesapeake Bay, controlling nonpoint source pollution is an important aspect of the City's environmental protection efforts. The Virginia Division of Soil and Water Conservation has designated the control of nonpoint source pollution as a high priority for all watersheds within the City.

Nonpoint source pollution from urban areas can be controlled by minimizing impervious areas from new development, reducing impervious areas through redevelopment, utilizing open space and preserving indigenous vegetation, restoring denuded vegetative stream buffers, and by employing the use of structural or nonstructural best management practices (BMPs), which operate by trapping stormwater runoff and detaining it until unwanted nutrients, sediment, and other harmful pollutants are allowed to settle out or be filtered through the underlying soil. The City's Chesapeake Bay Preservation regulation requires the achievement of certain performance standards for any development which takes place in designated Chesapeake Bay Preservation Areas.

A useful analysis tool in nonpoint source pollution mitigation is to examine where highly impervious areas of the City are in relation to the City's water resources. In this way, various nonpoint source pollution control efforts, from educational programs to redevelopment, can be concentrated on those areas most likely to produce the greatest impact on the quality of City water. Since the City is largely built out, these figures are helpful when considering where to concentrate redevelopment or retrofit to improve water quality. It is also

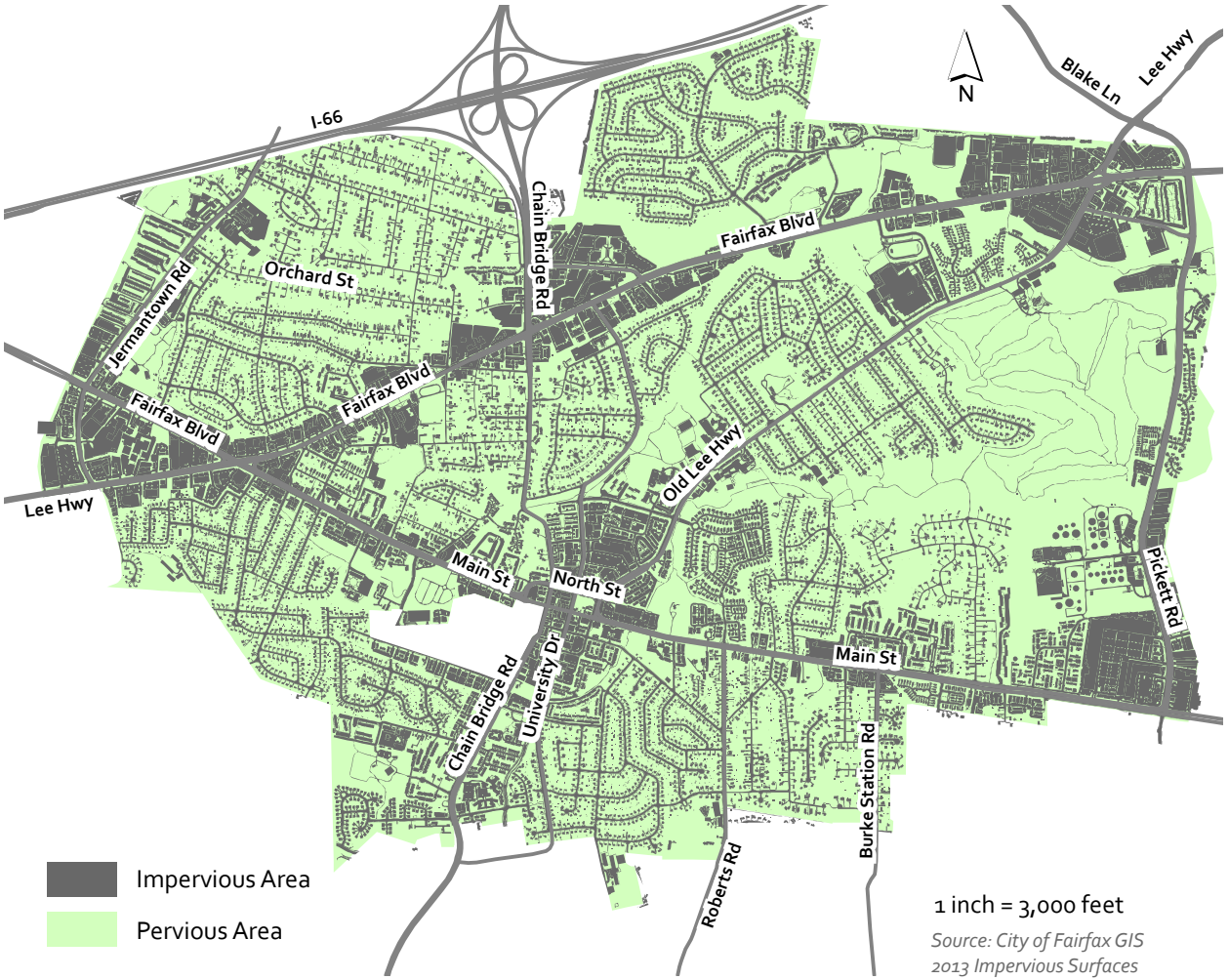
useful in deciding where and what types of public education programs may be beneficial. The City consists of approximately 42.7% impervious land areas and 57.3% pervious land areas (Figure A6).

The City's nonpoint source pollution control program also includes the City's Erosion and Sediment Control Ordinance. This ordinance requires that stormwater management facilities be installed during construction to help control increased stormwater runoff created by development thereby reducing the possibility of downstream flooding and erosion.

4.3. Streambank Erosion and Sedimentation

While streambank and land erosion is a natural process, land development has greatly accelerated this process. As large areas of once forested land have been replaced with impervious land cover, a greater quantity of stormwater is directly piped into local waterways at a much higher velocity. Signs of stormwater erosion include undercut streams and fallen banks, felled bushes and trees which once lined the banks, and exposed sewer and other utility pipes. Suspended sediments choke and muddy local waterways making them uninhabitable to local species of aquatic

FIGURE A6 PERVIOUS AND IMPERVIOUS AREAS

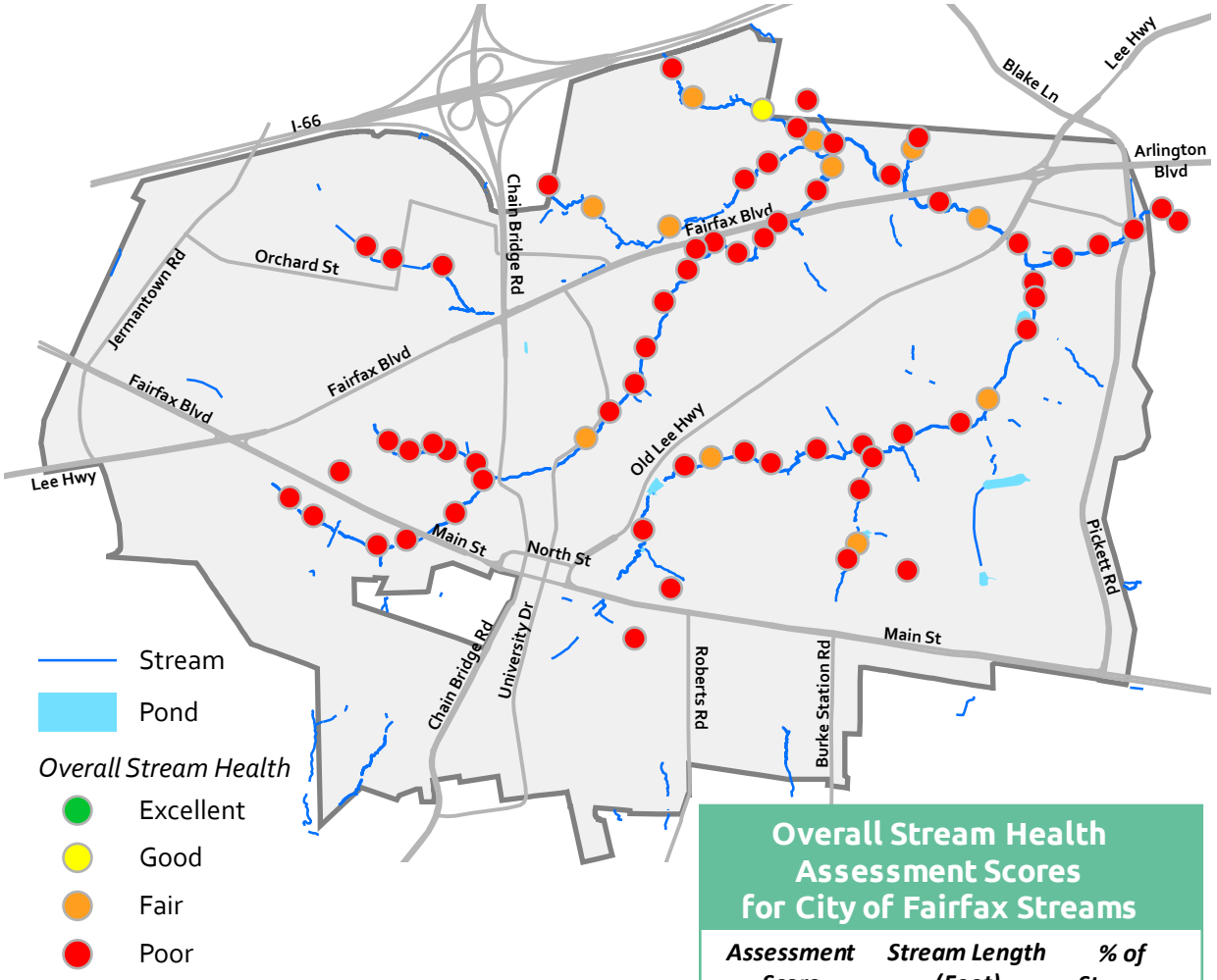


life. In addition, nutrients and other pollutants attach themselves to sediment particles and contribute to eutrophic conditions in the Potomac River and the Chesapeake Bay. Eventually, suspended sediments are deposited in slower moving portions of the stream course, causing buildup, destruction of benthic life forms, and a decreased stream capacity for floodwaters, thus resulting in greater potential for further erosion and property damage.

Completed in 2005, the City's Watershed Management Plan found that overall stream health to be fair to poor in the majority of the City (Figure A7); erosion potential remains at a very high level; there is evidence of sediment deposition which can cause water quality degradation and have negative impacts on aquatic life; and down-cutting streams threaten City utilities and surrounding property.

A bank erosion hazard index (BEHI) assessment was conducted on Accotink Creek (Figure A8) and Daniels Run (Figure A9). The BEHI is a methodology used to assess and predict stream bank erosion potential. Based on the BEHI results, over 90% of studied stream reach length had at least a high potential for stream bank degradation and over half of all stream

FIGURE A7 OVERALL STREAM HEALTH



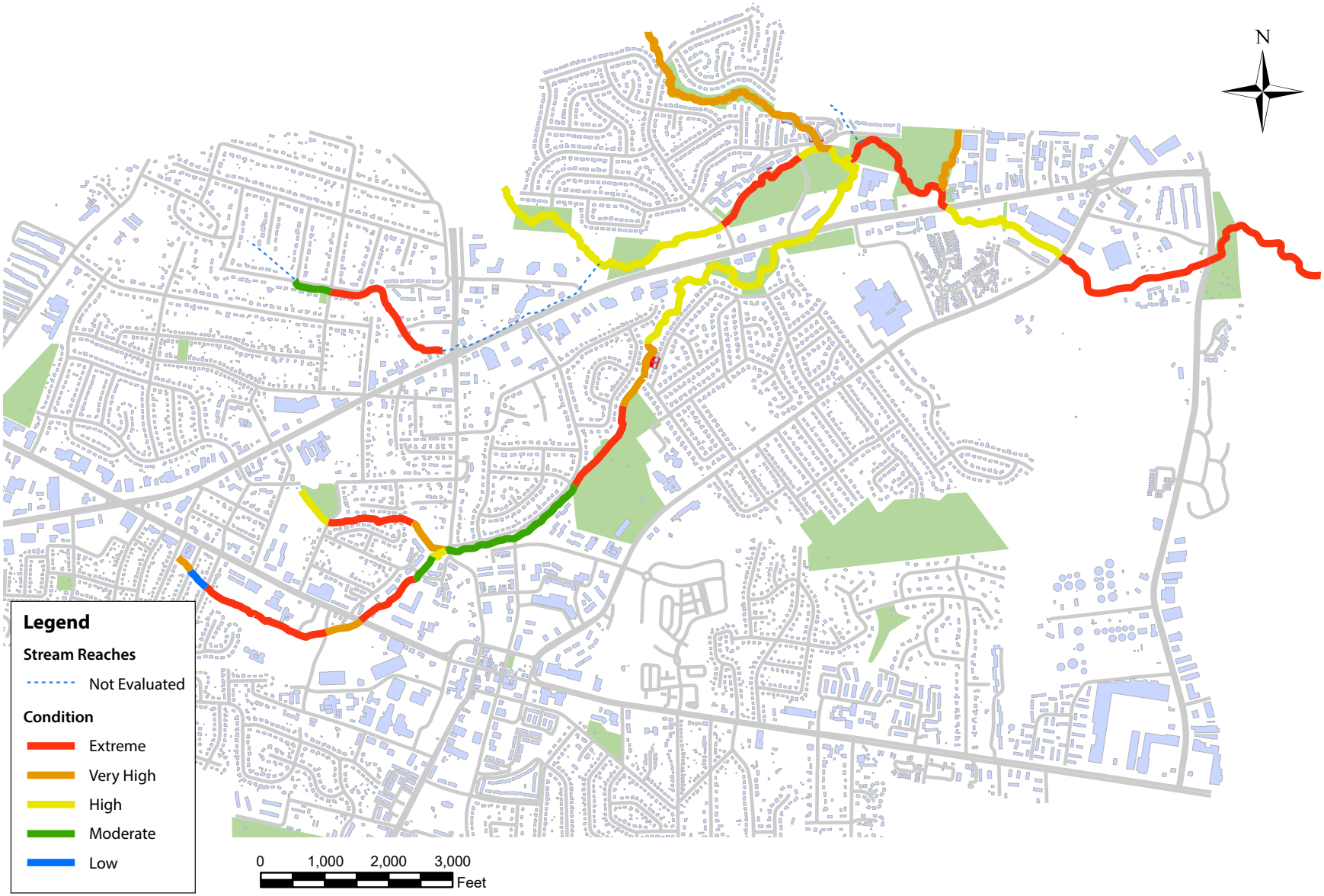
1 inch = 3,200 feet

Source: City of Fairfax GIS , Stream Assessment/Mapping and Chesapeake Bay Preservation Area Mapping Project, 2003; Accotink Creek Stream Stability Assessment and Prioritization Plan Supplemental Report for Daniels Run, 2008

Overall Stream Health Assessment Scores for City of Fairfax Streams

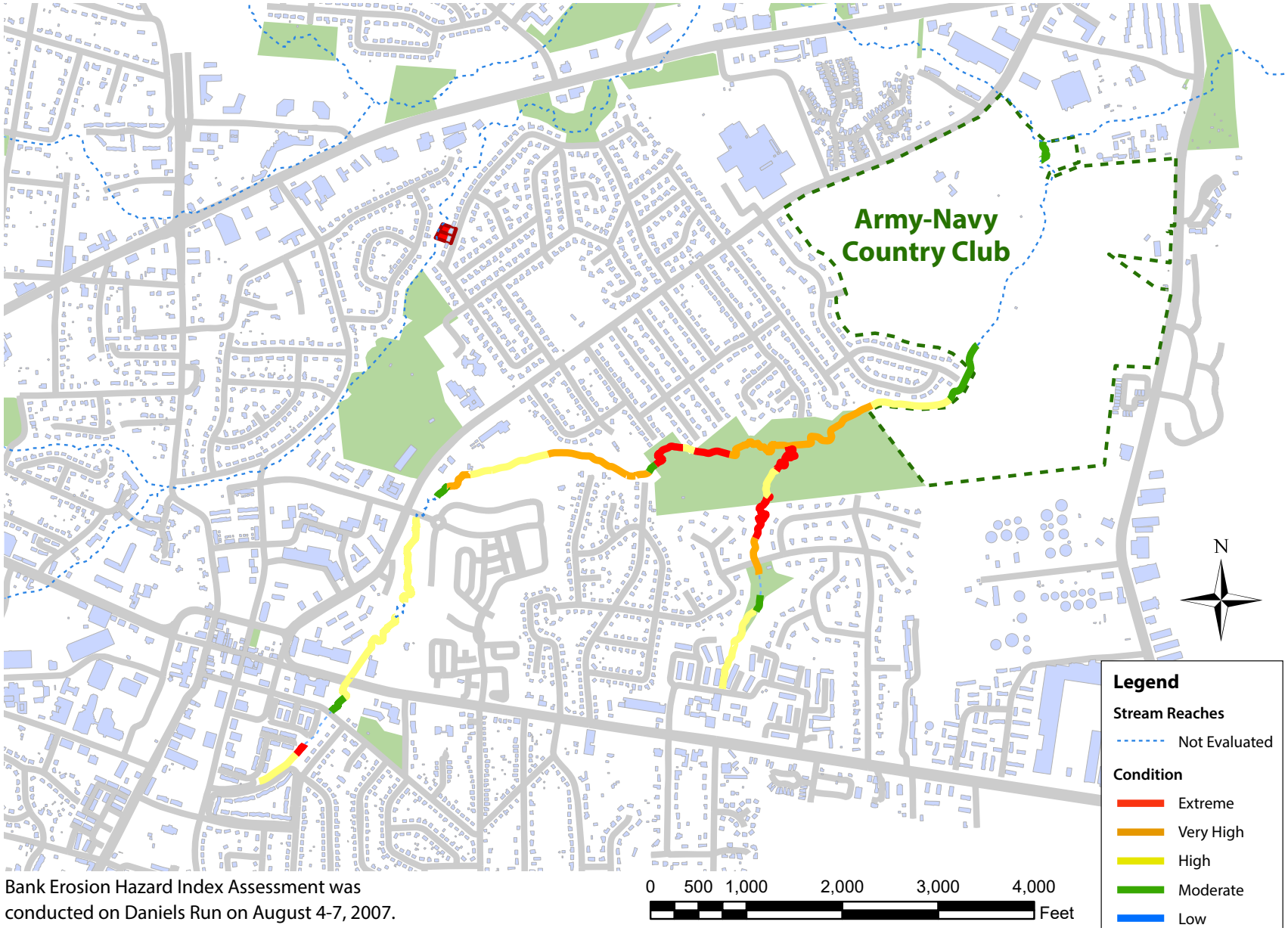
Assessment Score	*Stream Length (Feet)*	*% of Streams*
Excellent	0	0
Good	1,350	3
Fair	10,900	20
Poor	41,360	77

FIGURE A8 BANK EROSION HAZARD INDEX ASSESSMENT RESULTS FOR ACCOTINK CREEK



Bank Erosion Hazard Index Assessment was conducted on Accotink Creek on January 16-19, 2007.

FIGURE A9 BANK EROSION HAZARD INDEX ASSESSMENT RESULTS FOR DANIELS RUN



Bank Erosion Hazard Index Assessment was conducted on Daniels Run on August 4-7, 2007.

reaches were found to be at a very high or extreme risk for stream bank degradation. It is evident from these results that stream bank erosion is a major impact on the stability and overall health of the City's streams

4.4. Malfunctioning Water Quality BMPs

In response to the water quality requirements of the Chesapeake Bay Preservation Act, many development sites within the City will be called upon to establish water quality best management practices (BMPs). These BMPs are designed to detain polluted stormwater runoff until harmful pollutants have had a chance to settle, at which time the stormwater is slowly released. However, BMPs, like most other structural facilities, will deteriorate over time and require regular maintenance. Adequate maintenance will prolong the expected lifespan of a facility, therefore saving considerable money in the long-run. Further, while a properly functioning facility enhances downstream environments by mitigating the environmental impacts of land development, pollutant removal efficiencies will decline over time if regular maintenance is not performed.

Pursuant to the BMP Maintenance and Monitoring Agreement, Erosion and Sediment Control Plan, or Site Plan governing the facilities throughout the City, it is responsibility of the owner(s) to maintain the BMP facility in good working order. The maintenance agreement, Erosion and Sediment Control plan or Site Plan, provides the City of Fairfax with authority to conduct inspections of BMPs and Stormwater Management Facilities.

The City conducts a Citywide assessment to ensure all facilities are in working order on an annual basis. A representative from the City or an authorized consultant visits the property (or HOA property) to conduct an inspection of the stormwater control measures and BMPs in place to ensure proper maintenance is being performed in accordance with the suggested maintenance schedule for each facility.

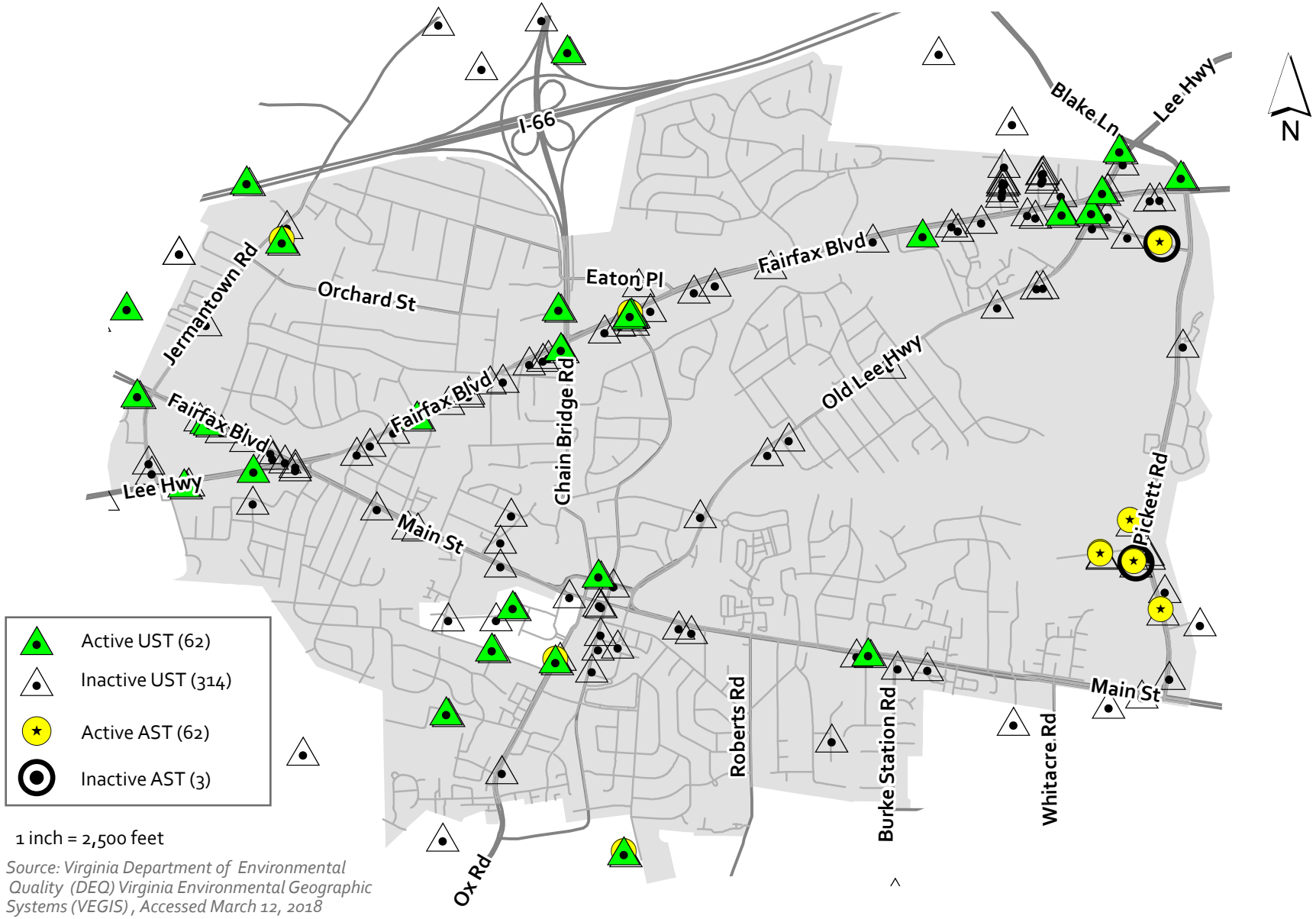
4.5. Underground Storage Tanks

The Virginia Department of Environmental Quality (DEQ), Water Division, is responsible for permitting and tracking underground storage tanks (USTs). Within the City limits, there are approximately 376 USTs of varying capacity at 118 street addresses. Of these USTs, only 62 are still active. The USTs are currently being used to store gasoline, diesel, used oil, heating oil, and other substances. Due to the fact that the City is a major commercial and transportation corridor, the City has a relatively high concentration of USTs for its land area. Underground storage tanks are concentrated along the City's commercial and industrial corridors including lower Pickett Road, Old Town Fairfax, the Kamp Washington area, the intersection of Chain Bridge Road and Fairfax Boulevard, and the Fairfax Circle area (Figure A8).

When properly maintained, underground storage tanks are safe, save space, and are a more aesthetically pleasing alternative than above ground storage tanks. However, leaking tanks are a major source of soil and groundwater contamination. Leaking USTs also have the potential to affect surface waters since many streams are fed by groundwater aquifers. Underground storage tanks often pose a greater threat than other sources of pollution because a leak or spill may not be detected until it has already created extensive damage. Further, there exist many underground storage tanks which were installed before more stringent regulations were applied. The location and condition of these tanks are often unknown.

Another important factor affecting the incidence of leaking tanks is the age of the tanks. Particularly in an area such as Fairfax where soils tend to be acid, older tanks are more likely to be subject to leakage than

FIGURE A10 LOCATION OF UNDERGROUND AND ABOVE GROUND STORAGE TANKS (USTS & ASTS)



Source: Virginia Department of Environmental Quality (DEQ) Virginia Environmental Geographic Systems (VEGIS), Accessed March 12, 2018

newer tanks designed to counter acid soil. Areas where age may be a factor are scattered throughout the City which should be a consideration when targeting areas for further investigation or for public/business education. Another factor to consider is the proximity of USTs to stream sites. Streams which are located near USTs of above average age may be at particular risk to contamination. Most of the commercial areas of the City directly impact on at least one perennial stream.

The City has and will continue to work with the owners of leaking underground storage tanks and the DEQ to ensure that any existing or future contamination is properly addressed and corrected.

4.6. Above Ground Storage Tanks

The Virginia State Water Control Board in 1998 adopted the regulation, 9 VAC 25-91-10 et seq., which consolidated three repealed regulations, that is, (i) Oil Discharge Contingency Plans and Administrative Fees, 9 VAC 25-90-10 et seq. (ii) Facility and Aboveground Storage Tank Registration Requirements, 9 VAC 25-130-10 et seq., and (iii) Aboveground Storage Tanks Pollution Prevention Requirements, 9 VAC 25-140-10 et seq.

The AST regulations were revised primarily to incorporate new performance standards for certain aboveground storage tanks (1 million gallon or more AST facilities) located in the City as mandated by the 2011 General Assembly (CH 884 of the 2011 Acts of Assembly). By July 1, 2021, the impacted facilities must satisfy specific requirements for strength testing, and release prevention barriers.

Individual tanks with a capacity of less than 660 gallons or multiple tanks with an aggregate capacity of less than 1,320 gallons are not currently regulated by the State or the federal government. Within the City limits, there are 65 regulated ASTs of varying capacity at 9 street addresses (Figure A 8). Of these ASTs, 62 are currently active. Most home fuel oil tanks are only 200 to 660 gallons. It is therefore the responsibility of the individual owner to ensure that leaks and spills do not occur. While individual household tanks do not pose a significant risk to the environment, the aggregate of tanks may pose a serious threat if small problems are not taken seriously. Releases from individual tanks may occur as a result of overfill or the tipping over of the tank. To reduce the risk of accidental spill, the homeowner or fuel company should inspect a tank before filling to ensure that it is sturdy and does not exhibit signs of corrosion. An owner should also have the capacity of the tank clearly marked on the tank and specifically indicate the filling cap location.

4.7. Illegal Dumping of Petroleum and Litter

The reported presence of petroleum products in City streams is a major water quality concern. Petroleum can severely damage the ecosystem by destroying plant life and killing aquatic lifeforms. While some petroleum products in the water may be attributable to leaking automobiles on nearby parking areas or leaking underground storage tanks, the most common source of petroleum is illegal dumping by do-it-yourself (DIY) automotive maintenance activities. A DIY is an individual who removes used oil from a motor vehicle, utility engine, or other piece of equipment that he or she operates as opposed to someone who takes the equipment to a lube shop or auto mechanic.

There is a risk that DIYers may pour the oil down a storm drain or throw it out in the trash, resulting in a release of oil into the environment. For areas such as the City of Fairfax, where streams are primarily fed by residential storm drains, only a few careless instances can result in a significant degradation

in water quality.

The City provides and advertises for the collection of used oil and oil filters at its Property Yard Recycling Center, implements a storm drain marking program, and works with local civic organizations and volunteers to install storm drain markers, which state "Only rain down the storm drain." These markers are used to educate residents that the storm drain eventually empties to the Chesapeake Bay watershed and to prevent the amount of pollution that reaches local creeks and rivers. The City may wish to consider the implementation of a public education program which not only informs residents what to do with used oil, but also tells them what to do if he/she witnesses a neighbor pouring oil down a storm drain.

4.8. Pet and Animal Wastes

Fecal coliform is a pollutant of concern in the City of Fairfax. While there are several potential sources of fecal coliforms, the most likely source is from pet waste, and particularly dog waste, which is not disposed of properly. City paths and walkways along streams (or near storm drains) provide for public access and scenic areas to walk, run, and bicycle. However, these public areas are also used by some pet owners who leave pet wastes which are then easily transported by the next storm directly into the water course.

Fecal coliform can severely impact on the viability of the City's water resources. Control mechanisms include enforcing local animal waste control provisions, BMPs, and natural stream buffers. While BMPs and natural buffers are established as part of the City's overall Chesapeake Bay Program, the most effective manner of control is through public education and better enforcement of the City's animal waste control regulation. Better enforcement and education can reduce the levels of fecal coliforms and nutrients in stormwater runoff.

The City will continue to promote and maintain the dog waste disposal stations along the park trail. The City will also add brochure holders to each waste station that contain public education / outreach materials related to the water quality impacts of dog waste.

4.9. Air Quality as it Relates to Water Quality

Recent evidence suggests that atmospheric deposition, as a result of poor air quality, has a greater impact on water quality than previously assumed. According to the EPA, air sources contribute about one-third of the total nitrogen loads to the Chesapeake Bay by depositing onto the tidal surface waters of the Bay and Bay watershed. Direct deposition to the Bay's tidal surface waters is estimated to be six to eight percent of the total (air and non-air) nitrogen load delivered to the Bay. Nitrogen deposited onto the land surface of the Bay's watershed and subsequently transported to the Bay is approximately 25 to 28 percent of the total nitrogen load delivered to the Bay.

The Clean Air Act requires significant air quality planning and implementation at local, State, and regional levels. The Clean Air Act regulations and programs are expected to achieve significant decreases in air deposition of nitrogen by 2020.

Nitrogen is the primary pollutant of concern for brackish waterbodies such as the Chesapeake Bay. While very little atmospheric deposition will fall directly into the City's streams, pollutants deposited on impervious surfaces, which make up approximately 42.7% of the City's land area, will be washed into local waterways via curbs, gutters, and storm drains during storm events. This has the potential to contribute significantly to water quality problems within the City and beyond.

The City has already contributed to improving air quality through the establishment of pedestrian and bicycle trails in accordance with the Comprehensive Plan and by keeping CUE bus fares low to encourage ridership. The City also continues to work with George Mason University and Fairfax County to encourage alternative forms of transportation.

Many approaches to improving air quality from mobile source emissions will be implemented at the State and regional levels through transportation control measures such as increased public transportation and high occupancy vehicle lanes. Technological advances such as alternative fuel vehicles and tighter tailpipe standards are other measures whose widespread application is expected. The City continues to contribute to these regional efforts through participation on the Metropolitan Washington Council of Government's Air Quality Committee and The Climate, Energy and Environment Policy Committee (CEEPC).

The City seeks to continue its commitment to clean air by expanding its efforts and adopting policies to increase public awareness of the environmental problems associated with air pollution.

Section 5. Environmentally Sensitive Features and Constraints on Development

Land use planning that takes into account sensitive natural features and water resources has the dual benefit of enhancing quality of life through protecting the environment from degradation as well as protecting businesses and homeowners from potentially harmful environmental hazards. Although land use patterns within much of the City are well established, a few vacant parcels still have development potential. These properties deserve special consideration and should be developed in a manner which integrates the man-made and natural environments.

Most development within the City, however, will take place as a result of redevelopment. Development prior to the late 1980s took place without the benefit of many environmental protection constraints; therefore some existing development is not sensitive to the potential for water quality degradation that development brings. With recent concern raised over environmental degradation, and particularly the effects of increased stormwater runoff on the City's streams, the City has begun to reevaluate past practices. Good planning now prescribes that when possible, development should avoid sensitive environmental features. The following section provides an overview of the sensitive natural resources within the City of Fairfax and an analysis of how these resources are currently being managed and additional management options.

5.1. Floodplains

The relatively flat or low land area adjoining a river, stream, or water course which is subject to partial or complete inundation is known as a floodplain. Encroachment on floodplains, such as artificial fill, reduces a stream's flood-carrying capacity, increases flood heights, and increases flood hazards in areas beyond the encroachment itself. In addition, floodplain soils are often unsuitable for development due to high water table, shrink-swell potential, and highly permeable and hydric soil conditions. Floodplains also provide important habitat for a range of vegetative and animal species.

In 1974, the Federal Emergency Management Agency (FEMA) conducted a study of flooding

potential and hazards in the City as part of its national flood insurance program. The plan was also meant to be used as a tool to assist local governments in effective floodplain management. As a result of the study, the City adopted a Floodplain regulation which establishes an overlay as part of the Zoning Ordinance in 1993. As discussed in Section 2.4, the current Floodplain regulation was adopted by the City in March, 2015. The overlay district severely limits the type and location of any development in the floodplain district. The floodplain district includes areas subject to inundation by waters of the one-hundred year flood. The one-hundred year floodplain within the City is associated with areas along the north and central forks of Accotink Creek, Daniels Run, and some major tributaries. A denuded or improperly developed floodplain can result in erosion and a significant reduction in water quality and reduce the effectiveness of the RPA. Figure A1 delineates the approximate extent of the one-hundred year floodplain (1 percent annual chance flood event) in the City.

5.2. Geologic and Sensitive Soil Conditions

It is difficult to overemphasize the importance of geology and soils characteristics when planning for new development and redevelopment. Development should be guided away from sensitive or unstable areas in order to protect the safety of residents, the structural soundness of buildings, and the water quality of Accotink Creek, Pohick Creek, Popes Head Creek, Difficult Run, and eventually the Potomac River and the Chesapeake Bay.

Common constraints placed by geologic conditions or sensitive soils include but are not limited to hydric conditions, shrink-swell potential, wetness, flooding potential, depth to bedrock, and high water table. Proper management of soils will help maintain clean water and will provide areas to recharge groundwater. However, poor management of soils will choke local waterways with silt and sediments and result in the erosion of valuable topsoil as well as spoil the landscape.

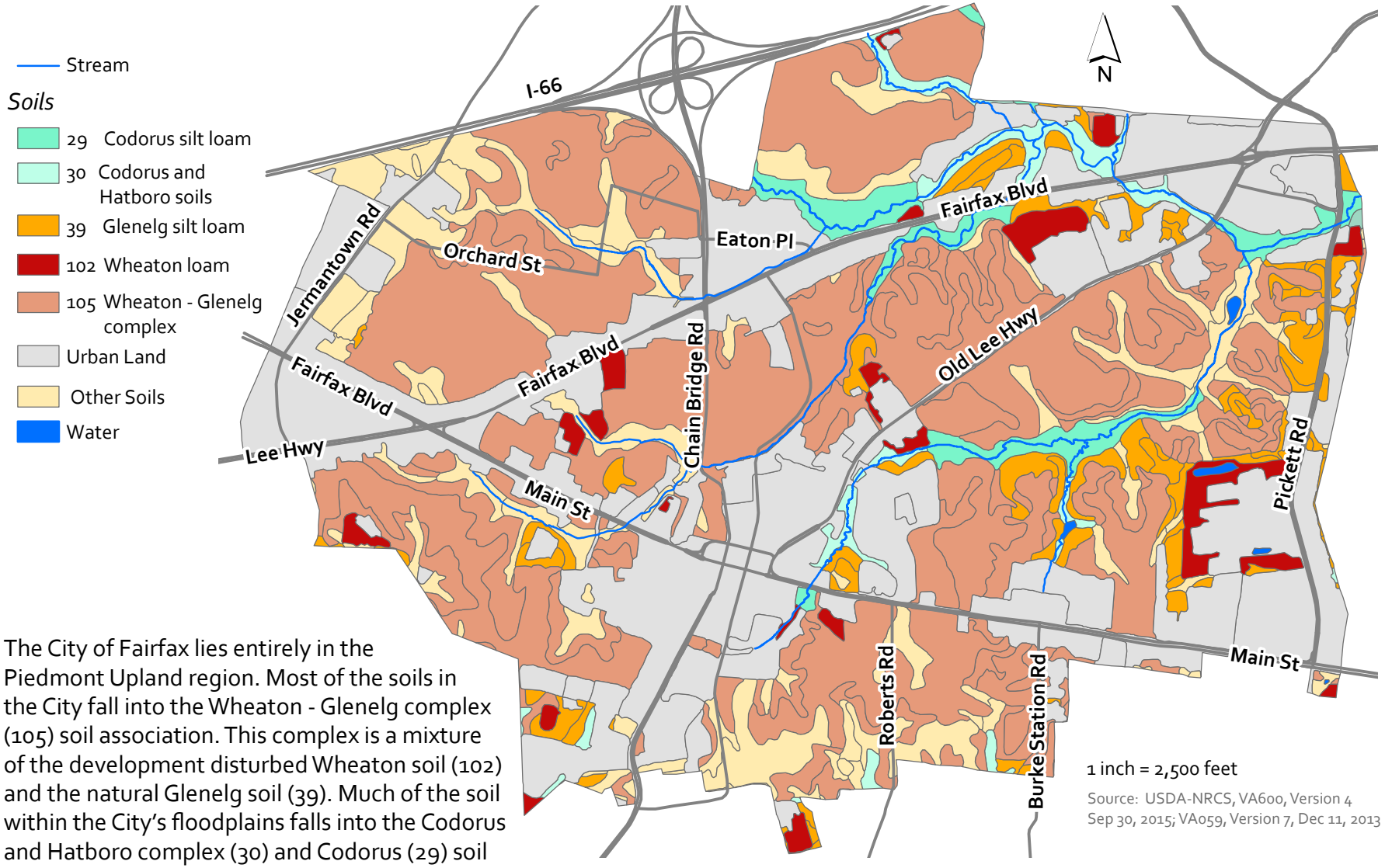
According to the USDA Natural Resources Conservation Service soil survey data (2015), most of the City falls into the Wheaton-Glenelg complex soil association. This complex is a mixture of the development disturbed Wheaton soil and the natural Glenelg soil which is well suited for development. Much of the soil within the City's floodplains falls into the Codorus and Hatboro complex and Codorus silt loam soil associations. These soils are poorly drained, subject to flooding, and not suitable for urban development. Figure A 9 presents the distribution of soil associations in the City.

The underlying geology of the City, along with climate, determines soils characteristics, which offers both constraints and opportunities for development. In order to promote soil conservation and protect water quality, as well as safeguard residents and businesses from potential hazards, including hazards such as radon, it is imperative that future development within the City takes geologic constraints into consideration. Most areas of the City are generally suitable for development purposes if a site is properly engineered. A discussion of the engineering capacity of underlying geology is inappropriate for this Plan due to its technical and detailed nature. Developers must refer to the City's Department of Public Works for more information and recommended resources.

5.3. Vegetative Buffers and Areas with Mature Tree Canopy Cover

To the maximum extent possible, the City wishes to maintain and enhance its urban tree cover. During development, provisions must be made to protect existing trees and replace trees when they are damaged or removed.

FIGURE A11 SOILS



The City of Fairfax lies entirely in the Piedmont Upland region. Most of the soils in the City fall into the Wheaton - Glenelg complex (105) soil association. This complex is a mixture of the development disturbed Wheaton soil (102) and the natural Glenelg soil (39). Much of the soil within the City's floodplains falls into the Codorus and Hatboro complex (30) and Codorus (29) soil associations.

The City's Chesapeake Bay Preservation regulation also requires that a 100-foot buffer area along perennial streams be maintained or established during development or redevelopment in order to protect streams from the adverse effects of increased impervious surfaces and resultant runoff.

Since the City is almost entirely developed, few significant vegetation stands remain. Those that still exist deserve special protection so that their aesthetic and ecological benefits to the City are not lost. The largest City-owned vegetation stand is located at Daniels Run Park. The park covers 48 acres, most of which is in a natural state. It contains deciduous vegetation with an oak canopy and a beech understory. Other tree types found there are hickory, sycamore, tulip poplar, and holly. The 20-acre Van Dyck Park is partially wooded as is the 10-acre Ranger Road Park. The 20-acre Providence Park is largely wooded, and contains many of these same tree types.

The City's concern for trees is reflected in its Arbor Day tree planting activities and its designation every year starting in 1987 as a Tree City by the National Arbor Day Foundation.

5.4. Non-Tidal Wetlands

Wetlands provide a variety of environmental and socio-economical benefits and also serve as important fish and wildlife habitat. Wetlands enhance water quality by filtering water as it passes through, thereby reducing sediments, nutrients, and chemical and organic pollutants flowing to open water. Wetlands also assist with flood control and serve as groundwater discharge and recharge areas. The U.S. Fish and Wildlife Service estimates that up to 43% of the threatened and endangered species rely directly or indirectly on wetlands for their survival.

The City has a total of 11 acres of wetlands. Figure A2 presents the City's water resources, including wetland areas. There are 8.6 acres of woody wetlands, which consist of areas where forest or shrubland vegetation accounts for 25-100 percent of the cover and the soil or substrate is periodically saturated with or covered with water. The remaining 2.4 acres of wetlands are classified as emergent herbaceous wetlands, which consist of areas where perennial herbaceous vegetation accounts for 75-100 percent of the cover and the soil or substrate is periodically saturated with or covered with water.

Pertinent law protecting non-tidal wetlands includes Section 404 of the federal Clean Water Act, which addresses dredge and fill operations and is administered through the Army Corps of Engineers, and the Virginia Water Protection Permit Act. Other programs, such as those under the Virginia Endangered Species Act and various floodplain management regulations, also serve to protect non-tidal wetlands.

Under the City's Chesapeake Bay Preservation regulation, non-tidal wetlands connected by surface flow and contiguous to tidal wetlands or water bodies with perennial flow are designated as RPAs. All other non-tidal wetlands are protected as part of the RMA. Most wetlands within the City are located contiguous to a tributary stream and within the confines of the floodplain.

5.5. Topography

Poorly designed and constructed developments on steep slopes frequently result in substantial costs to the public, either for repairs or for protective measures to prevent further damage. Increased runoff and sedimentation from denuded hillsides require increased public expenditures for flood control and stormwater management. Further, improperly planned development of hillsides affects the equilibrium of vegetation, geology, slope, and soil.

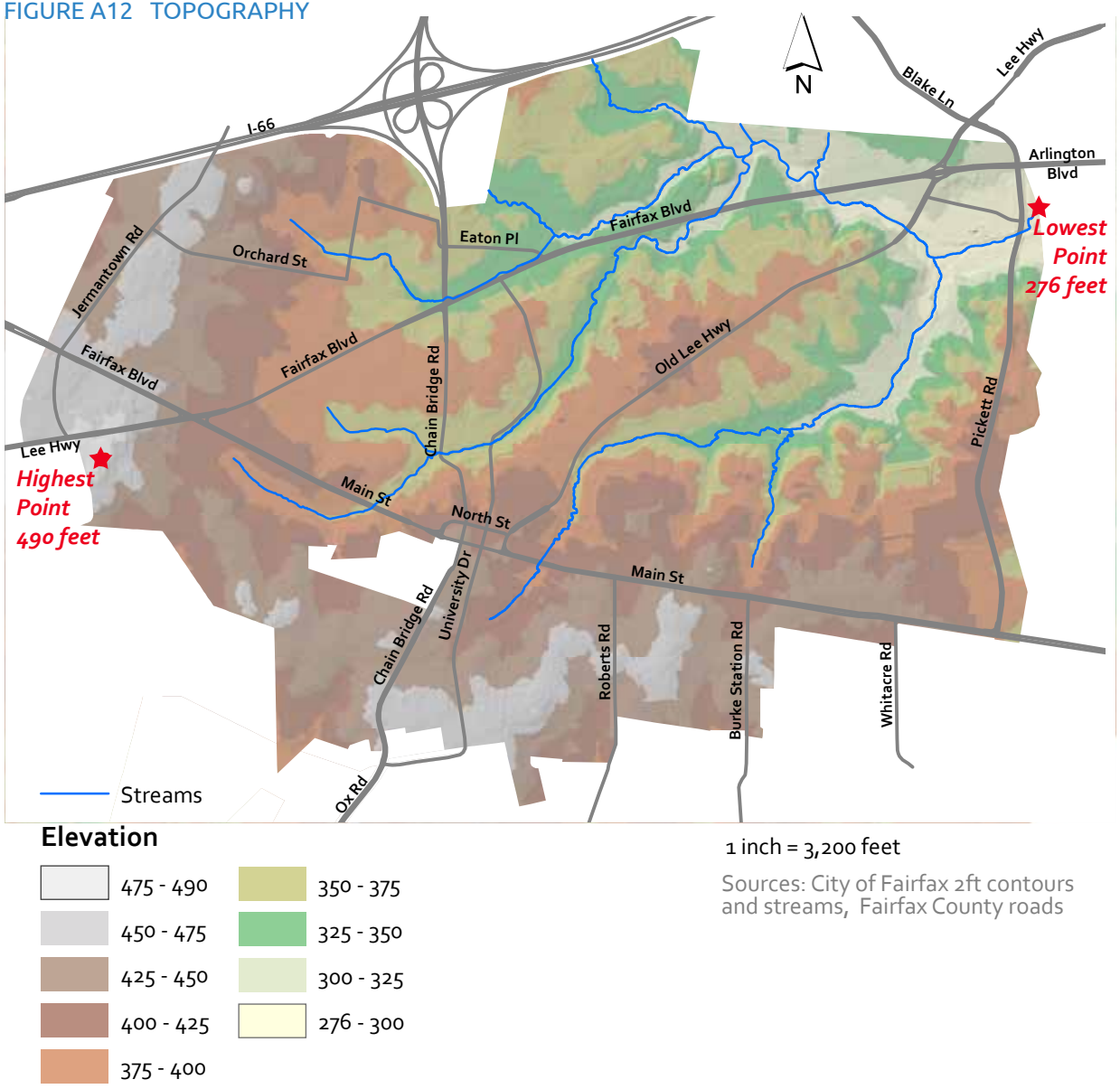
While the City is largely built out, any redevelopment within the City must take topographic constraints into consideration for the following reasons:

- Disturbance of hillsides can result in soil instability and increased erosion.
- Disturbances of hillside can increase runoff.
- Disturbance of hillsides can destroy a community's aesthetic resources.

Steep slopes in excess of 15 percent and slopes located along streams are susceptible to erosion; therefore, particular care must be taken when planning to develop a site with this characteristic. In some instances, special engineering may be required to stabilize slopes. Figure A10 presents a topographic map of the City.

Only a very small portion of the City's land area has slopes of over 15%. These areas are primarily associated with reaches of Accotink Creek and Daniels Run and lie within the City-owned Van Dyck and Daniels Run Parks and in the Army Navy Country Club Property.

FIGURE A12 TOPOGRAPHY



5.6. Groundwater Protection

The importance of groundwater protection was recognized by the Commonwealth of Virginia when the General Assembly enacted the Groundwater Act of 1973 and the Groundwater Management Act of 1992. The Groundwater Management Act reads "... unrestricted usage of groundwater is contributing and will contribute to pollution and shortage of groundwater, thereby jeopardizing the public welfare, safety, and health."

Although the City now receives a treated water supply from the Potomac River and Occoquan Reservoir, protection of the City's groundwater must be a consideration during development and redevelopment. When development occurs, it affects the natural balance of the groundwater flow. Increased imperviousness as a result of development reduces the potential for groundwater recharge and should be taken into consideration when designing a site plan. Generally, high topographic areas are groundwater recharge areas and impervious surface areas in defined groundwater recharge areas should be minimized. By providing recharge areas for stormwater, groundwater equilibrium can be maintained. If recharge areas are not taken into consideration, wells may go dry, base flow to streams is reduced, and wetlands may shrink.

Once contaminated, the usefulness of an aquifer as a resource may be limited or destroyed depending on the toxicity of the contamination and the effort, time, and money involved in clean-up. In most cases it is impractical and sometimes impossible to restore a contaminated aquifer to its original level of purity. Common sources of groundwater contamination include but are not limited to leaking underground storage tanks, antiquated sewer lines, septic systems situated on improper soils, and improperly capped wells. In addition, improperly maintained water quality best management practices may present a groundwater threat. In the City, the most common source of groundwater contamination on record with the DEQ, Water Division, is from petroleum leaks and spills. More stringent underground tank standards enacted in recent years should reduce the level of contamination from these sources.

Recommendations

The City recognizes the importance of the Chesapeake Bay as an economic and social resource and is committed to its protection through the implementation of the Chesapeake Bay Preservation Area Designation and Management Regulations. The following provides the background information and analysis necessary for the City to arrive at informed and proactive policies and goals which address the issue of water quality protection in City streams and the Chesapeake Bay.

These recommendations approach water quality protection from the viewpoint that environmental regulations and healthy economic development are not mutually exclusive, but rather that both may be accomplished simultaneously, and that the result is a better quality of life for all City residents.

Recommendation 1: Protect the quality of the City's surface water resources, the Potomac Estuary, and the Chesapeake Bay from the avoidable impacts of land development.

- **Enforce the provisions of the City's Chesapeake Bay Preservation regulation.**

  The Chesapeake Bay Preservation regulation is the City's primary water quality protection tool. The regulation is designed to protect the overall quality of the City's water resources and the health of the Chesapeake Bay as it relates to impacts from existing and new development.

- **Enforce the City's Erosion and Sediment Control Ordinance.**

  The Erosion and Sediment Control Ordinance serves to protect City streams during site development by minimizing erosion and sedimentation.

- **Maintain strong City oversight of private BMP maintenance programs.**

  Review the effectiveness of the City's current BMP maintenance program and determine whether stronger inspection and maintenance measures are warranted. Make recommendations for how to improve the City's maintenance program, if necessary.

- **Continue implementation of stream restoration and improvement efforts.**

  Continue efforts to stabilize the physical conditions and restore the stream habitat to enable the natural restoration of the streams' biological integrity. The City should continue to prioritize the worst stream reaches, and coordinate improvements with overall watershed strategy.

- **Ensure that development avoids where possible, or minimizes, disturbance of sensitive environmental features, including problem soils.**

  Improper development of sensitive environmental features, and particularly soils, may result not only in structural damage to buildings, but also to a loss of soil to erosion, a decrease in local water quality, and the loss of important habitat and aesthetic resources.

Recommendation 2: Ensure the adequacy of the City's future stormwater management system while emphasizing the need to protect tributary streams and water quality.

- **Improve the City's ability to identify sensitive environmental features.**

  Readily available information concerning environmentally sensitive features will help the City to better plan for and avoid negative environmental impacts resulting from land disturbing activities. The development and redevelopment processes often result in the generation of substantial information on environmental features. During the development process, the City should take the opportunity to collect information, generated from site plans, reports, etc. on sensitive environmental areas, and particularly on soils.

  The City should arrange a protocol to compile this information to create an overlay map identifying environmentally sensitive features within the City including steep slopes, soils, wetlands, floodplains, undisturbed natural areas, and features that are unique or integral to the City's character.

- **Continue to conduct and implement watershed management plans to allow for a holistic approach to local water resource protection.**

  The City should continue to conduct watershed studies and planning to evaluate conditions and identify actions that would improve watershed health. The City should also continue to assess the effectiveness of capital projects and examine long-term trends in the City's water quality.

- **Minimize exposure of the City's natural floodplains to new development.**

  Natural floodplains are essential to the conveyance of stormwater in that they provide extra holding capacity during storms. Floodplains left in their natural condition form a filter for polluted runoff from surrounding land uses. Protection of the City's floodplain is achieved through enforcement of the City's Floodplain regulation.

- **Encourage the use of shared or regional stormwater control measures during development and redevelopment.**

  The implementation of a large number of small, site-specific stormwater quality/quantity management facilities increases maintenance costs and consumes valuable land. The City should seek to facilitate cooperative agreements among developers to encourage the establishment of shared or regional stormwater management facilities.

- **Continue to allocate dedicated and sustainable funding to guarantee the stormwater program's continued viability.**

  Provide the funds necessary to meet MS4 permit and TMDL requirements and to address other stormwater infrastructure needs, such as ensuring adequate capacity for flood control, replacing aging infrastructure, and performing preventive maintenance on all City stormwater management facilities.

  Reassess the Stormwater Fund on a regular basis to ensure that revenue generated adequately covers program needs.

Recommendation 3: Reduce existing sources and prevent potential sources of point and nonpoint source pollution resulting from residential, commercial, and industrial activities within the City.

- **Continue implementation of the City's Water Quality Monitoring Program.**

  At the end of each MS4 permit reporting period, the City prepares annual Water Quality Monitoring Reports, which are included with the City's MS4 Annual Report. Once appropriate amounts of sampling data have been collected under the Water Quality Monitoring Program, the City will analyze the results to determine the next steps (e.g. potentially pinpoint areas that could to be targeted for pollution prevention or source control programs).

- **Encourage the use of green stormwater infrastructure and low impact design on private and public property.**

  Enhance zoning regulations and support initiatives that encourage the use of green stormwater infrastructure and low impact design on private and public property. Consider providing incentives for developers to incorporate green infrastructure and low impact design in their plans.

- **Continue efforts to improve the region's air quality.**

  The City should continue to pursue measures to improve air quality through support of pedestrian access and mass transportation. Since air quality is a regional concern, continued participation on the Metropolitan Washington Air Quality Committee is necessary to achieve many air quality goals.

- **Improve the City's ability to respond to the potential hazards of leaking underground and above ground storage tanks and pipelines.**

  The City should continue to work closely with the DEQ, Water Division, to monitor and enforce clean-up of underground storage tanks.

  The City should support programs to educate residents on how to safely manage above ground storage tanks and should promote policies aimed at providing opportunities to reduce reliance on above ground storage tanks through conversion to alternative forms of fuel.

- **Expand public education and outreach programs.**

  Continue to develop and implement education and outreach programs to improve awareness and encourage the community to protect and improve the quality of area waters. The City will include appropriate public involvement and participation to meet MS4 requirements and satisfy other watershed objectives.

- **Continue to improve upon the City's strong recycling program.**

  A well-publicized recycling program will decrease illegal disposal of materials, and particularly of oil, into the City's storm sewer system.

Recommendation 4: Protect the quality of the City's potable water supply and safeguard the City's groundwater resources against contamination that may adversely affect the ecosystem.

- **Work with the Department of Environmental Quality's Water Division to protect groundwater from contamination from underground storage tanks.**

  The primary threat to the City's groundwater is contamination from underground storage tanks. While the City has no legal authority to regulate underground storage tanks, it should work closely with the DEQ's Water Division to identify areas with high contamination potential and to quickly remediate areas where contamination has already occurred.

B Transportation Practices and Policy

The Multimodal Transportation Chapter of the Comprehensive Plan references several innovative practices that can help the City achieve its goals in improving transportation infrastructure and services. Many of these practices require further study before the proper implementation strategy can be determined. This includes analyses of new advancements in technology as they occur, as well as policy priorities for the City.

Specific actions in the Comprehensive Plan refer to the Transportation Practices and Policy Appendix for more information. This appendix provides detailed information which should be used as an initial step in implementing the recommendations of the Comprehensive Plan that reference these innovative practices.

Contents

Section 1. Best Practices/Future Trends

BIKESHARE

The central jurisdictions of the region (Washington, D.C. and Arlington County) launched Capital Bikeshare (CaBi) in 2010 with 400 bikes and 50 stations. Since that time the system has expanded to 2,500 bikes at over 400 stations across a number of additional jurisdictions in the region, including Fairfax County. City stakeholders and partners expressed an interest in bringing bikeshare to the City, either expanding CaBi or establishing an independent system serving local travel needs.

CARSHARING

Carsharing has been operational in the region for over a decade. Zipcar is the largest operator in the region at the present time, offering round-trip as well as point-to-point or one-way rental options. Round-trip carsharing requires that users return the vehicle to the same designated spot when finished with their rental period.

One-way carshare allows a user to take the car from one point within a service area and leave it at a different legal parking space within the area. Car2go operates within the District of Columbia and Arlington County offering one-way service. The fee for round-trip carshare is typically on an hourly or daily basis while the cost for a one-way carshare trip is typically calculated on a minute and distance basis.

Peer-to-peer carsharing closely mimics the round-trip carshare service provided by carshare companies but is instead provided by individual auto owners listing their personal car available for use to other "members" via an electronic platform.

Photo Credit (all photos): Nelson\Nygaard

RIDESOURCING

Taxis are a traditional form of ridesourcing where a passenger calls into a central dispatch or hails a clearly branded vehicle to provide a one-way ride. Smartphones and app-based services have enabled the rise of Transportation Network Companies (TNCs) such as Uber and Lyft. TNCs use an online mobile platform to connect passengers to drivers, who use their personal vehicles. With less oversight and regulation, the cost of a TNC ride at present is generally lower than that of a taxi trip.

Image Credit: Lyft

AGGREGATED RIDE SOURCING

The platforms used for ridesourcing have become progressively more sophisticated. Several TNCs now offer riders the option of sharing a ride with others traveling along their general line of travel to further lower trip costs, concurrently increasing travel efficiency with higher vehicle occupancy within the same roadway space. Uber offers "Uber Pool" while Lyft supports "Lyft Line." These aggregated ridesourcing options pool riders, thus lowering travel costs.

Photo Credit: Nelson\Nygaard

PRE-ARRANGED OR DYNAMIC CARPOOLING

Multiple web or smartphone based applications facilitate carpooling both on a regular basis (pre-arranged) or sporadically. Apps like Zimride and RideAmigos match drivers with passengers along a pre-determined route and planned time of day. If desired, some applications permit drivers and riders to be matched across complementary characteristics such as employment or student status, gender, age, and even music preferences. Dynamic carpooling is the electronic equivalent of the traditional Washington region practice of "slugging" where drivers can spontaneously be matched with a rider in real time along their intended route. Under both models, drivers and passengers share costs and take advantage of high occupancy lanes by capitalizing on empty seats in their vehicles.

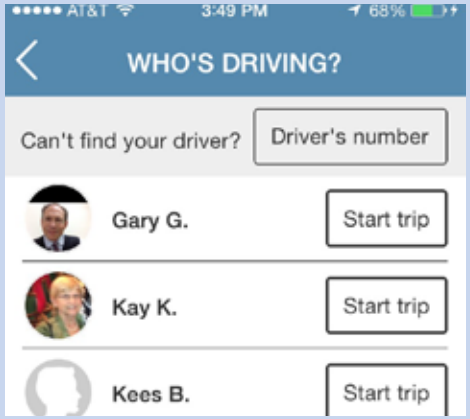


Image Credit: ZimRide

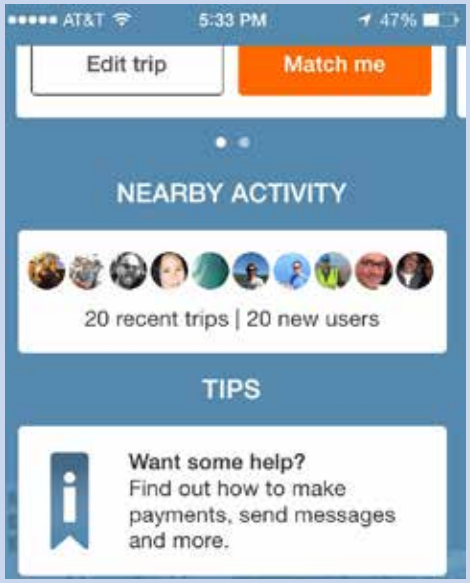


Image Credit: ZimRide

MICROTRANSIT

Microtransit follows the same principle as aggregated ride sourcing, but generally with more added efficiency. It uses online services to dynamically generate on-demand routes along an efficient travel path. Rather than picking each passenger up at their door of origin, passengers may need to walk a short distance to a collector road and arrive at the designated location shortly before the vehicle arrives. By reducing the amount of circling and the dwell time waiting for passengers, microtransit reduces travel time and delay, increases vehicle efficiency, and reduces individual travel costs.

Image Credit: Via

Image Credit: Via

CONNECTED + AUTONOMOUS VEHICLES

Vehicular technology continues to progress at a rapid rate, and the time is soon coming when human drivers may no longer be needed to operate passenger vehicles. Connected vehicles have the ability to communicate with one another and with the surrounding infrastructure, provided the infrastructure has "smart" capabilities. Autonomous Vehicles can operate independently by observing cues in the built environment. Future vehicles will likely utilize the capabilities of both connected and autonomous technologies. Such vehicles may have the ability to dramatically increase the efficiency and capacity of existing roadway facilities and decrease the need to operate and store (e.g. park) private vehicles. Thus, autonomous vehicles, with the right policy guidance, may reduce vehicle ownership, reduce the need for long-term parking, and increase accessibility and mobility across the economic spectrum.

Image Credit: Bosch

Photo Credit: EasyMile

Section 2. Smart Infrastructure + Real-Time Information

Improved technology in both Intelligent Transportation Systems (ITS) and better information for users provides great promise for more efficiency in mobility systems and greater predictability and control for users. The following system elements have been implemented elsewhere in the greater Washington D.C. area. Some elements may be appropriate for managing traffic and improving trip making in the City.

SMART SIGNALS

These signals are connected to a central control center and may be adjusted either according to a programmed algorithm or by central control. Smart signals can adjust to changing demands in the roadway network and may be used to facilitate the advancement of transit vehicles (transit signal priority or TSP), passively detect pedestrians and bicyclists, and/or meter traffic volumes to even out the flow of traffic and mitigate congestion, improving the operation and efficiency of multiple modes.

DYNAMIC SIGNAGE

Dynamic signage includes variable message boards and variable speed signs such as those found along I-66, and also includes urban signage indicating the location and availability of parking spaces. These signs provide real-time information to motorists without requiring the use of a smartphone or app. Dynamic signage at transit stops can indicate the next bus anticipated to arrive and the time of arrival. Dynamic signage can help to better distribute traffic loads, minimize unnecessary circling of vehicles searching for parking, and increase user confidence with regard to transit. Dynamic signage can reduce traffic volumes by 10% to 30%, particularly in central business areas.

DEMAND-RESPONSIVE PRICING

Applying basic economic principles to encourage more efficient use of the transportation system, demand-responsive pricing uses real time and/or historical information on parking or travel demand to optimize supply and demand. When demand is high and available supply (or capacity) is low, mobility services are priced higher. During periods of low demand, the cost of travel or parking is correspondingly low. Such strategies reduce congestion, increase efficiency in the system, and ensure the availability of reliable capacity (for a price) for essential trips. When coupled with lower cost, higher capacity travel options such as transit, ridesharing/ride sourcing, and safe non-motorized options, demand-responsive pricing can appropriately meet travel needs without necessarily resulting in higher overall transportation costs to users.

TRAVEL PLANNING APPS

The best travel planning apps integrate a number of different travel options including driving (in a personal vehicle or ridesource vehicle), transit, bicycle, walking and/or a combination of multiple modes. These apps provide users with real time information on both travel time and cost, including the probability of travel delay, while some also provide information on personal and environmental health benefits or impacts of various choices. Smart applications link directly to other applications to help the traveler arrange the mode of travel they selected, such as hailing an Uber or reserving a carshare vehicle. Travel apps and mobility service payment systems are evolving such that in the near future, travelers will also be able to pay for their transit trip, bikeshare use, or high-occupancy tolls all from a single point of transaction. This should help to even the playing field of awareness and convenience across all travel options.

Section 3. Transportation Demand Management

Cities have traditionally approached transportation from the supply side of the equation, and this is a critical role for cities to play. Cities have significant control over how much vehicle capacity, bicycle accommodation, or parking is provided in their communities. But some economists advise cities that they must also consider and manage the demand side of the equation as well. Managing demand requires a more nuanced approach, but is, in many ways, more effective than supply-side management alone.

Transportation Demand Management (TDM) provides information and incentives to allow travelers to make the best choices for themselves. It is also a way for jurisdictions to make the most of transportation systems they have already built and optimize investments they have made by encouraging the use of excess capacity before adding additional capacity. Excess capacity exists in the form of empty seats on buses or in cars. It exists on sidewalks, trails, and bike lanes. It exists in the 20 hours of the day outside of the peak hours of traffic congestion. And it exists in the parking spaces that remain empty when the vehicle they are intended for is at another destination.

TDM serves cities, but it also brings benefit to users as well – often saving money on transportation costs, improving reliability and predictability in their travel, giving greater freedom of choice, lowering stress, and perhaps even improving personal health.

Section 4. Pedestrian Accessibility Policy

Best Practice

The best pedestrian-supportive infrastructure policies are applicable to the entire community and focus on safety and connectivity. Best practice policies are compliant with all applicable state and federal regulations, including the Americans with Disabilities Act (ADA) ,and establish a methodology for prioritization and performance evaluation.

The following are potential policies to improve pedestrian-supportive infrastructure.

- Prioritize walking connections to transit stops, schools and parks. Implement first-last mile walking connection to transit and prioritize access to transit stops.
- Support projects that improve pedestrian connectivity.
- Improve pedestrian access to destination areas in the City.
- Improve pedestrian routes that connect students to schools.
- Maintain a sidewalk inventory.
- Establish a methodology for project prioritization and performance evaluation.
- Improve pedestrian access across major roadways that create barriers to connecting the network. Comply with all state and federal regulations including the ADA.

Policy Recommendation

The following is a draft recommended policy for the City.

In order to promote safety and provide for the most vulnerable users in the transportation system – children, seniors, and persons with disabilities – it is the policy objective of the City that all streets have at least one sidewalk on both new and existing streets of all street types.

- All new streets should provide sidewalks on both sides of the street irrespective of anticipated traffic volumes, unless explicitly designed as a shared street.
- Sidewalks should be considered with every major maintenance, restoration, or street reconstruction project. Sidewalks may be constructed independent of other street projects.
- Streets with moderate to high vehicle volumes (5,000 or more vehicles per day) should have sidewalks on both sides of the street. Moderate volume streets should have a continuous sidewalk at least along one side. Local streets (less than 5,000 vehicles per day) should have a sidewalk on at least one side of the street, unless specifically designed as a shared street.
- Sidewalks should be a minimum of five feet wide.
- The sidewalk network should be continuous and connected. Curb ramps must be provided at street crossings.

Section 5. Complete Streets Policy

Best Practice

A Complete Streets policy should include a community's vision for transportation, account for many types of uses and community needs, and allow for flexible implementation.

The following are potential policies by which to implement Complete Streets principles:

- Approach every planned transportation improvement as an opportunity to apply the Complete Streets principles.
- Apply Complete Streets policies to all public and private projects and developments that impact the right-of-way.
- Allow Complete Streets elements to be phased over time.
- Identify regional, state, and federal funding for Complete Streets improvements.
- Collaborate and coordinate between departments and transportation agencies to efficiently utilize funds.
- Identify performance measures and report progress annually.
- Maintain an inventory of bicycle and pedestrian infrastructure to identify gaps.
- Identify and prioritize projects based on infrastructure needs.
- Train staff and decision makers on the technical content and best practices of Complete Streets principles.

Policy Recommendation

The City will approach all planned transportation improvements and all development projects with right-of-way impacts as opportunities to advance the value and objective of safety and Complete Streets. It shall be the policy of the city that:

- Every street safely accommodate all users.
- Any street subject to major maintenance, rehabilitation or reconstruction will provide safe accommodation for all users of all abilities.
- The means of accommodation will be appropriate to the street context and developed in consultation with community stakeholders.
- The city will pursue regional, state, and federal funding opportunities to support Complete Streets improvements.
- City agencies and departments will collaborate and coordinate with one another and adjacent jurisdictions to apply Complete Streets principles and provide continuous networks.
- Progress on Complete Streets will be measured in concert with the adopted measures of the City of Fairfax Multimodal Transportation Plan.

Index

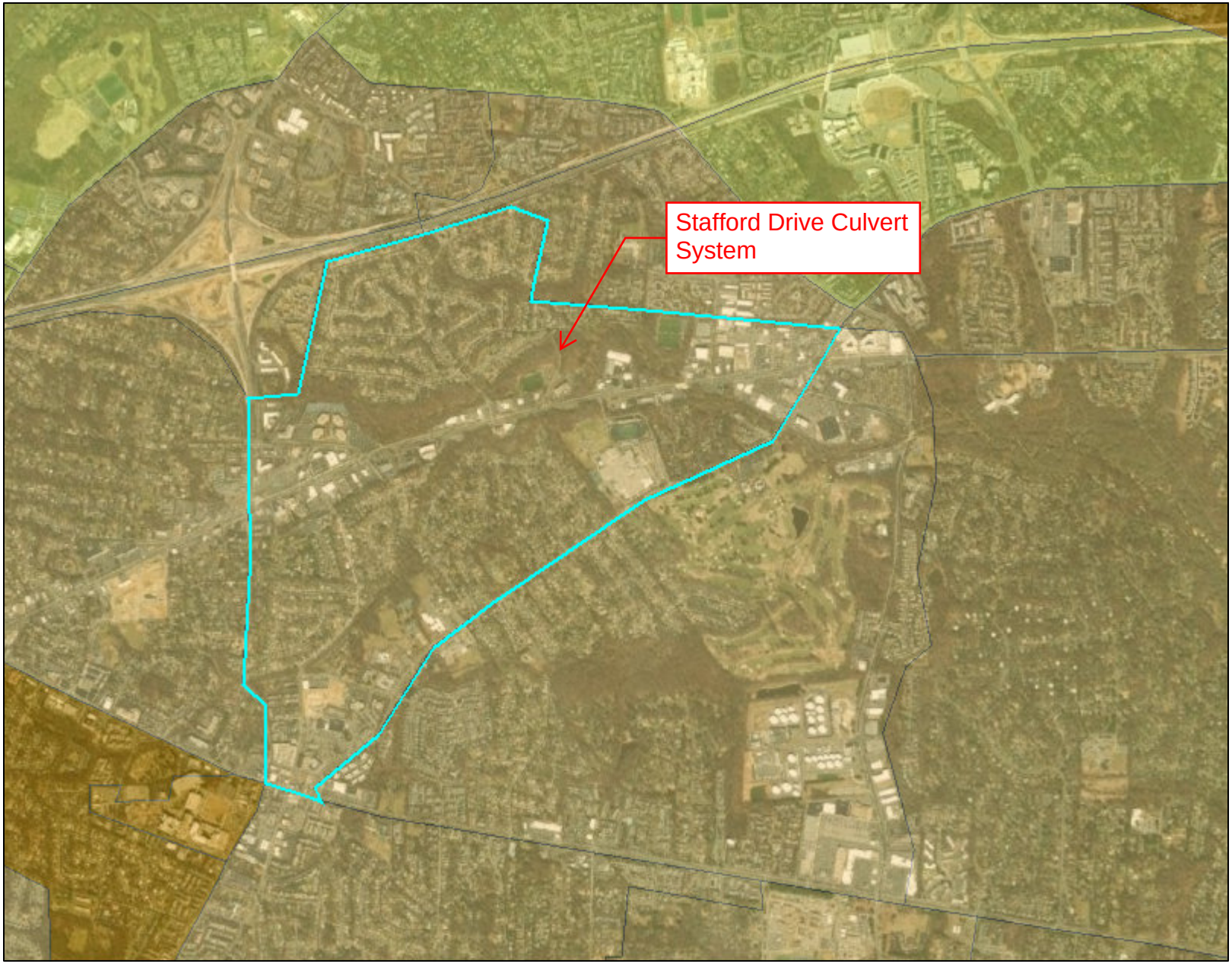
Attachment 3.6

Study Area – ADAPT VA Vulnerability Map

Mosby Wood Study

Social Vulnerability Index Score

- Very Low Social Vulnerability
- Low Social Vulnerability
- Moderate Social Vulnerability
- High Social Vulnerability
- Very High Social Vulnerability
- Not inlcuded in the analysis



March 29, 2022

1:36,112

0 0.2 0.4 0.8 mi

0 0.35 0.7 1.4 km

Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Created from the Virginia Vulnerability Viewer

Center for Coastal Resources Management
Virginia Institute of Marine Science

ADAPTVA

Attachment 3.7

United States Census Median Household Income Virginia & City of Fairfax

United States Census Bureau

QuickFacts

Fairfax city, Virginia; Virginia

QuickFacts provides statistics for all states and counties, and for cities and towns with a ***population of 5,000 or more***.

Table

Income & Poverty	Fairfax city, Virginia	Virginia
Total accommodation and food services sales, 2012 ($1,000) (c)	**218,575**	**17,795,901**
PEOPLE		
Income & Poverty		
Median household income (in 2019 dollars), 2015-2019	$116,979	$74,222
Per capita income in past 12 months (in 2019 dollars), 2015-2019	$50,029	$39,278
Persons in poverty, percent	⚠ 9.3%	⚠ 9.2%

About datasets used in this table

Value Notes

⚠ Estimates are not comparable to other geographic levels due to methodology differences that may exist between different data sources.

Some estimates presented here come from sample data, and thus have sampling errors that may render some apparent differences between geographies statistically indistinguishable. Click the Quick Info ⓘ icon to th row in TABLE view to learn about sampling error.

The vintage year (e.g., V2021) refers to the final year of the series (2020 thru 2021). Different vintage years of estimates are not comparable.

Fact Notes

(a) Includes persons reporting only one race
(c) Economic Census - Puerto Rico data are not comparable to U.S. Economic Census data
(b) Hispanics may be of any race, so also are included in applicable race categories

Value Flags

- Either no or too few sample observations were available to compute an estimate, or a ratio of medians cannot be calculated because one or both of the median estimates falls in the lowest or upper in open ended distribution.
F Fewer than 25 firms
D Suppressed to avoid disclosure of confidential information
N Data for this geographic area cannot be displayed because the number of sample cases is too small.
FN Footnote on this item in place of data
X Not applicable
S Suppressed; does not meet publication standards
NA Not available
Z Value greater than zero but less than half unit of measure shown

QuickFacts data are derived from: Population Estimates, American Community Survey, Census of Population and Housing, Current Population Survey, Small Area Health Insurance Estimates, Small Area Income and P Estimates, State and County Housing Unit Estimates, County Business Patterns, Nonemployer Statistics, Economic Census, Survey of Business Owners, Building Permits.

Commonwealth of Virginia

CFPF, rr <cfpf@dcr.virginia.gov>

City of Fairfax - CFPF Grant Application Submittals

1 message

Eto, Satoshi <Satoshi.Eto@fairfaxva.gov> Fri, Apr 8, 2022 at 7:04 AM
To: "cfpf@dcr.virginia.gov" <cfpf@dcr.virginia.gov>

Good morning,

Please follow this link to download two CFPF grant applications from the City of Fairfax.
https://www.dropbox.com/sh/blwg7yl4zo41nbr/AAAx6EfEfrMXYagxxz5REBgMa?dl=0

The applications could not be attached directly to this email due to file size (50MB/ea).

Please feel free to reach out to me if you have any questions. Thank you!

FAIRFAX CITY

Satoshi Eto, CPM

Public Works Program Manager

703 385 7810 **O** • 703 273 6073 **Direct**

TTY:711

www.fairfaxva.gov