



Loudoun County

2010 Countywide Transportation Plan

Adopted June 15, 2010
Amended through March 6, 2018



List of Acronyms ~

| | | | |
|--------|--|------------|---|
| AASHTO | American Association of State Highway and Transportation Officials | MWAA | Metropolitan Washington Airports Authority |
| ADA | Americans with Disabilities Act | MWAQC | Metropolitan Washington Air Quality Committee |
| BPOL | Business Professional and Occupancy License revenues | NEPA | National Environmental Policy Act |
| BRT | Bus Rapid Transit | NVRPA | Northern Virginia Regional Park Authority |
| CAAA | Clean Air Act Amendments of 1990 | NVTA | Northern Virginia Transportation Authority |
| CDA | Community Development Authority | NVTC | Northern Virginia Transportation Commission |
| CLRP | Constrained Long-Range Plan | PPTA | Public Private Partnership Act of 1995 (also refers to agreements) |
| CMAQ | Congestion Mitigation and Air Quality Improvement Program | ROW | Right-of-Way |
| COG | Metropolitan Washington Council of Governments | SAFETEA-LU | Safe Accountable Flexible Efficient Transportation Equity Act: A Legacy for Users |
| CTB | Commonwealth Transportation Board | SRIP | Secondary Road Improvement Program |
| CTP | Countywide Transportation Plan | STP | Surface Transportation Program |
| DRPT | Virginia Department of Rail and Public Transportation | TCC | Transportation Coordinating Council of Northern Virginia |
| EIS | Environmental Impact Statement | TDM | Travel Demand Management |
| FHWA | Federal Highway Administration | TEA-21 | Transportation Equity Act for the 21 st Century (1998) |
| FTA | Federal Transit Administration | TIP | Transportation Improvement Program |
| HOA | Home Owners Association | TPB | National Capital Region Transportation Planning Board |
| HOV | High Occupancy Vehicle | USDOT | United States Department of Transportation |
| HTID | Highway Transportation Improvement District (Route 28) | USEPA | United States Environmental Protection Agency |
| ITE | Institute of Transportation Engineers | VDOT | Virginia Department of Transportation |
| JLMA | Joint Land Management Area | VHT | Vehicle Hours of Travel |
| LOS | Level of Service | VMT | Vehicle Miles Traveled |
| LSDO | Land Subdivision and Development Ordinance | VTDP | Virginia Transportation Development Plan |
| MIS | Major Investment Study (also referred to as corridor study) | W&OD | Washington and Old Dominion Trail |
| MPO | Metropolitan Planning Organization | WMATA | Washington Metropolitan Area Transit Authority |



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Preface ~

Countywide Transportation Planning in Loudoun

Transportation planning has evolved significantly in Loudoun County over the last several decades. Early planning efforts included the *Eastern Loudoun Area Management Plan* (ELAMP) and *Dulles North Area Management Plan* (DNAMP), adopted in the 1980s, and the *Choices and Changes General Plan*, adopted in 1991. These plans solidified the County's growth strategy and with assistance from, and coordination with, the Virginia Department of Transportation (VDOT) and regional transportation entities, the County laid out a transportation network designed to establish and enhance connectivity internally and regionally. Development of the transportation network started with the existing historical roads with parallel roads added as necessary.

By 1991, development proposals for a number of large, planned communities had been approved in accordance with these plans and critical pieces of the road network were starting to emerge. Subsequent area plan efforts including the *Dulles South Area Management Plan* (DSAMP), completed in 1993, and the *Toll Road Plan* (TRP), completed in 1995, represented significant expansion of the County's "urban growth area" and higher planned densities. The transportation policies, maps and design specifications adopted with these plans reaffirmed the General Plan network, but included provisions to ensure that land development applications contemplating higher densities only be approved when and if the infrastructure was in place.

The first Countywide Transportation Plan (CTP) was initiated in 1993 and completed in 1995. This effort included consideration of the future transportation needs of the County in both an immediate and long range planning context. The CTP looked at network and corridor issues and provided conceptual recommendations that would warrant further analysis and feasibility studies. The next planning efforts included the DSAMP (1997) and TRP (1998) amendments and the *Revised General Plan* (RGP) and *Revised CTP* in 2001. These plans had the advantage of more sophisticated tools and technology to allow closer consideration of the impacts of land use on the transportation network and included more accurate mapping and modeling to assess the fiscal impacts and affordability of the County's growth and development pattern. The regional transportation model was used during these efforts and led to recommendations for modifications to the ultimate conditions, typical sections and design guidelines for certain roads. The plan also resulted in much greater policy direction for transit and bicycle and pedestrian modes.

Today, with the *2010 Countywide Transportation Plan*, the County further refines its strategy for the orderly construction, maintenance, and improvement of the transportation system.

The 2010 Countywide Transportation Plan

The *2010 Countywide Transportation Plan* continues to serve as a guide for future transportation infrastructure investment to be financed by Federal, State, and local dollars as well as private sector contributions. The *2010 CTP* also helps to inform residents and employers of the County's approach to addressing mobility needs and how the future transportation system may impact a specific neighborhood or property.

The *2010 CTP* is a companion document to the *Revised General Plan*. Together these two documents, along with the *Loudoun County Bicycle and Pedestrian Mobility Master Plan*, give policy guidance on land and infrastructure development and direction for new area plans. The Comprehensive Plan is adopted by the Board of Supervisors in accordance with State enabling legislation (Code of Virginia, Chapter 15.1). As set out in the Code of Virginia, Loudoun County's purpose in adopting the Comprehensive Plan is to



achieve a “coordinated, adjusted, and harmonious development” of land. While the *Revised General Plan* addresses the timing, character, and location of new development, and contains public facilities policies, the *2010 CTP* and the *Loudoun County Bicycle and Pedestrian Mobility Master Plan* provide for adequate transportation services and facilities to serve both existing and new development. By State law, the County must update the plan at least every five years, although the Board may consider amendments earlier. Changes to the adopted policies of the plan require a formal plan amendment process. The *2010 CTP* is not linked to a specific implementation schedule but rather proposes solutions and programs that are to be implemented in both the short- and long-term to accomplish the overarching transportation vision.

Comprehensive Plan Review Process

In October, 2005, the Loudoun County Board of Supervisors initiated an amendment to review and update the *2001 CTP*. Subsequently, in June, 2006, the Board of Supervisors awarded the contract to update the *2001 CTP* to the consultant firm of Michael Baker, Jr., Inc. The consultant, together with County staff, worked to complete the technical analysis and ultimately provided an updated document for the Planning Commission to review in May, 2007. Upon receiving the document, the Planning Commission undertook its review and proceeded to solicit public input through hearings, forums, and stakeholder meetings to discuss the variety of issues, including major transportation policies, to be considered. As the calendar year drew to a close, however, the terms of the Board of Supervisors and Planning Commissioners ended. As a result, the new Board members established a revised schedule for completion of the review of the updated CTP. Additionally, the Board of Supervisors elected to integrate the Countywide Transit Plan, the County’s first transit plan, which had been under development as part of a separate process, into the CTP. With the adoption of the revised schedule, the new Planning Commission resumed review of the CTP along with the Transit Plan in January, 2009. With this review, additional public input sessions and stakeholder meetings were held with public outreach efforts culminating in a public hearing in October, 2009. The Planning Commission certified the draft updated CTP on April 7, 2010 and forwarded it to the Board of Supervisors for review and adoption. On June 15, 2010, the *2010 CTP* was formally adopted by the Board.

Analytical Framework

The policies presented in the *2010 CTP* are intended to support the land use policies of the *Revised General Plan*. The *2010 CTP* policies address a full range of transportation modes, including auto travel, transit, bicycling, and walking. Each of these modes was identified and evaluated using criteria such as safety, level of service, potential impacts on the environment and community quality of life, and the adaptability of each alternative to possible changes in land use. The transportation system outlined in the *2001 CTP* formed the baseline for this analysis and was subsequently modified after a series of qualitative and quantitative tests, including several runs of the County’s travel demand forecasting model. Road improvement projects are categorized into near-, intermediate-, and long-term priorities and can be found in Appendix 3.

Plan Format

The content of the *2010 CTP* is organized into the following chapters and appendices.

Chapters

- Chapter One presents the County’s transportation vision, strategies, and goals.
- Chapter Two sets the policies for the County’s overall road network, including policies for the Suburban, Rural, Transition, and Town Policy Areas, level of service standards for roads, road design



and construction standards, traffic calming measures, private streets and road improvement priorities.

- Chapter Three presents the County's commitment to transit, both rail and bus, and it also describes the travel demand management strategies that the County intends to employ to reduce single-occupancy travel demand on the County's road network or redistribute this demand away from peak travel periods.
- Chapter Four sets the policies for bicycle and pedestrian facilities along CTP roads.
- Chapter Five discusses policies related to the accessibility of airports within the County, including the Leesburg Airport and Dulles International Airport.
- Chapter Six discusses County coordination with state, regional and local agencies.
- Chapter Seven establishes the relationship between current environmental and historic resource policies and transportation.
- Chapter Eight outlines the various funding sources available to the County and suggests how these funds should be used and also includes a discussion of proffers and proffer policies.
- Chapter Nine presents a series of implementation measures that outline ongoing and future planning efforts that are necessary to fully realize the policies of the *2010 Countywide Transportation Plan*.

Appendices

- Appendix One outlines existing, interim and/or ultimate conditions of specific segments of the County's existing and future public road network.
- Appendix Two outlines the technical analysis process undertaken by the County's consultant as part of the update of the CTP road network.
- Appendix Three presents the priorities and timeframes for major improvement projects in the *2010 CTP* including estimated costs and funding sources, where available.
- Appendix Four contains route profiles for recommended bus routes contained within the CTP.
- Appendix Five outlines the technical analysis process undertaken by the County's consultant to identify recommended transit provisions.
- Appendix Six provides planning guidelines for bicycle and pedestrian facilities along CTP roads.
- Appendix Seven contains State-endorsed highway noise abatement policies.



Chapter 1

Transportation Goals and Strategies

Loudoun County is one of the fastest growing counties in the nation. The unprecedented growth the County has experienced over the last several decades has resulted in continued and ever-increasing strain on its transportation network. Transportation continues to be one of the most important services provided by government, fulfilling the crucial role of linking people to their jobs, schools, recreation and shopping. As such, and in light of this environment of rapid growth, careful transportation planning must be undertaken in order to ensure that the mobility needs of the County's citizens continue to be met over the long-term.

The *2010 Countywide Transportation Plan (2010 CTP)* is a forward-looking planning document that addresses this challenge by establishing a long-range vision for the County's transportation network and defining policies that provide for the successful implementation of that network. The transportation network includes major roads, public transit services, bicycle and pedestrian accommodations, and airports. The plan itself is organized into a series of chapters, appendices and maps.

The *2010 CTP* is designed to be a companion document to the County's *Revised General Plan*, both of which are core elements of the County's Comprehensive Plan. Together they provide policy guidance on land and infrastructure development. As part of the Comprehensive Plan, the CTP is required to be reviewed every five years, as called for in the Virginia Code.

I. The 2010 Countywide Transportation Plan Update

This document, initiated in the Fall of 2006, fulfills the requirements of the Virginia Code by updating the *2001 CTP*. The *2010 CTP* update contains several key changes. This edition of the CTP includes a revised road network, developed to meet vehicular travel needs through the year 2030. The *2010 CTP* also includes, for the first time ever, a comprehensive countywide transit plan that recommends phased implementation of transit improvements to address forecast changes in demand and the anticipated introduction of Metrorail service to Loudoun County. The County's transit needs are also projected through the year 2030. Finally, the *2010 CTP* now also includes integrated planning guidelines for bicycle and pedestrian facilities along major roads.

Changes to the transportation network were identified and evaluated using criteria such as safety, level of service, potential impacts on the environment and community quality of life, and the current land use policies. The *2001 CTP* formed the baseline for this analysis and was subsequently modified after a series of qualitative and quantitative tests, including several runs of the County's travel demand forecasting model.

II. Transportation Goals

The updated vision for Loudoun County's transportation network is encompassed in, guided by and implemented through a number of over-arching goals. These goals provide the foundation upon which the plan and the success thereof rest.



From a broad perspective, the vision for the County's transportation network can be summed up in the following goal:

1. Provide a safe, affordable, convenient, efficient, and environmentally sound multi-modal transportation system to serve Loudoun County.

At the same time, the County should:

2. Ensure that the transportation system supports all applicable County goals including but not limited to the *Revised General Plan's* goals for supporting vibrant communities and employment centers and protecting natural and heritage assets, and
3. Ensure that the character of and quality of life in the County are protected and maintained, and
4. Ensure that planned land uses are supported by appropriate transportation planning with respect to the types, levels and timing of transportation improvements to serve the four Suburban Policy Area communities and employment centers, the Transition Policy Area, towns and the Rural Policy Area.

Finally, in order to fully implement the plan, the County should:

5. Ensure its interests are addressed and that cooperation between neighboring jurisdictions is facilitated in regional and statewide plans, and
6. Ensure that the maximum funding available is obtained for transportation improvements.

III. Transportation Strategies

The County has identified a series of strategies to implement the transportation goals:

1. *Provide a safe, affordable, convenient, efficient, and environmentally sound multi-modal transportation system to serve Loudoun County.*
 - a. Complete the build-out of the major road network while ensuring integration with the local road network, encourage connectivity between developments to reduce the overall burden on the major road network and set tangible, achievable goals demonstrating incremental progress towards that end.
 - b. Complete a multi-modal system to include rail, express buses, feeder buses, bicycle and pedestrian-friendly communities and ensure that all new projects or major reconstruction projects shall accommodate travel by vehicles, pedestrians, bicyclists and transit riders as integral elements of the County's transportation system.
 - c. Work with the Virginia Department of Transportation to implement a multi-modal safety improvement program and multi-modal design standards.
 - d. Identify priorities that will provide the greatest benefit.
 - e. Employ intelligent transportation systems technologies in order to maximize the efficiency of the transportation network.
 - f. Track overall system performance.



-
- g. Develop educational programs to promote and encourage the use of transit, bicycle and pedestrian transportation.
 - 2. *Ensure that the transportation system supports all applicable County goals including but not limited to the Revised General Plan's goals for supporting vibrant communities and employment centers and protecting natural and heritage assets.*
 - a. Integrate transportation policy with land use policy.
 - b. Locate improvements and facilities to complete gaps in the Suburban Policy Area transportation system and reduce trip lengths, travel times and automobile dependence.
 - 3. *Ensure that the character of and quality of life in the County are protected and maintained.*
 - a. Work with the Virginia Department of Transportation to update standards within the context of a multi-modal network.
 - b. Employ context-sensitive design in order to respect historic and environmental features and community character.
 - c. Identify scenic by-ways and historic routes.
 - d. Respect and encourage shared use of rural roads by pedestrians, equestrians, farm vehicles, bicyclists and automobiles by making only those improvements necessary for the safety and utility of all users.
 - e. Support road designs within residential neighborhoods that are compatible with pedestrian and local residential use.
 - 4. *Ensure that planned land uses are supported by appropriate transportation planning with respect to the types, levels and timing of transportation improvements to serve the four Suburban Policy Area communities and employment centers, the Transition Policy Area, towns and the Rural Policy Area.*
 - a. Link land use and transportation decisions.
 - 5. *Ensure the County's interests are addressed and that cooperation between neighboring jurisdictions is facilitated in regional and statewide plans.*
 - a. Fully participate in regional and statewide planning efforts.
 - 6. *Ensure that the maximum funding available is obtained for transportation improvements.*
 - a. Comply with all applicable environmental regulations.
 - b. Pursue proffers, special tax districts, business ventures, bonds, other funding sources, or a combination thereof as appropriate.
 - c. Lobby state and federal officials.



IV. Document Intention and Overview

Guided by the goals and strategies listed above, in the chapters that follow, the updated visions for each element of the transportation network are described, and specific policies to implement those visions are outlined. The remaining chapters are dedicated to key issue areas affecting transportation planning, including regional coordination, the built and natural environment, funding, and implementation. This document provides a tool to be used to provide for the orderly construction and improvement of the transportation system, and a guide for future transportation infrastructure investment.



Chapter 2

County Road Network

Loudoun County's roads form the backbone of its transportation network. This chapter outlines the vision and associated policies that govern the planning, design and operation of Loudoun County's road system. It features a revised road network that attempts to address future congestion concerns, reflecting vehicular travel needs through the year 2030.

I. Development of the Road Network

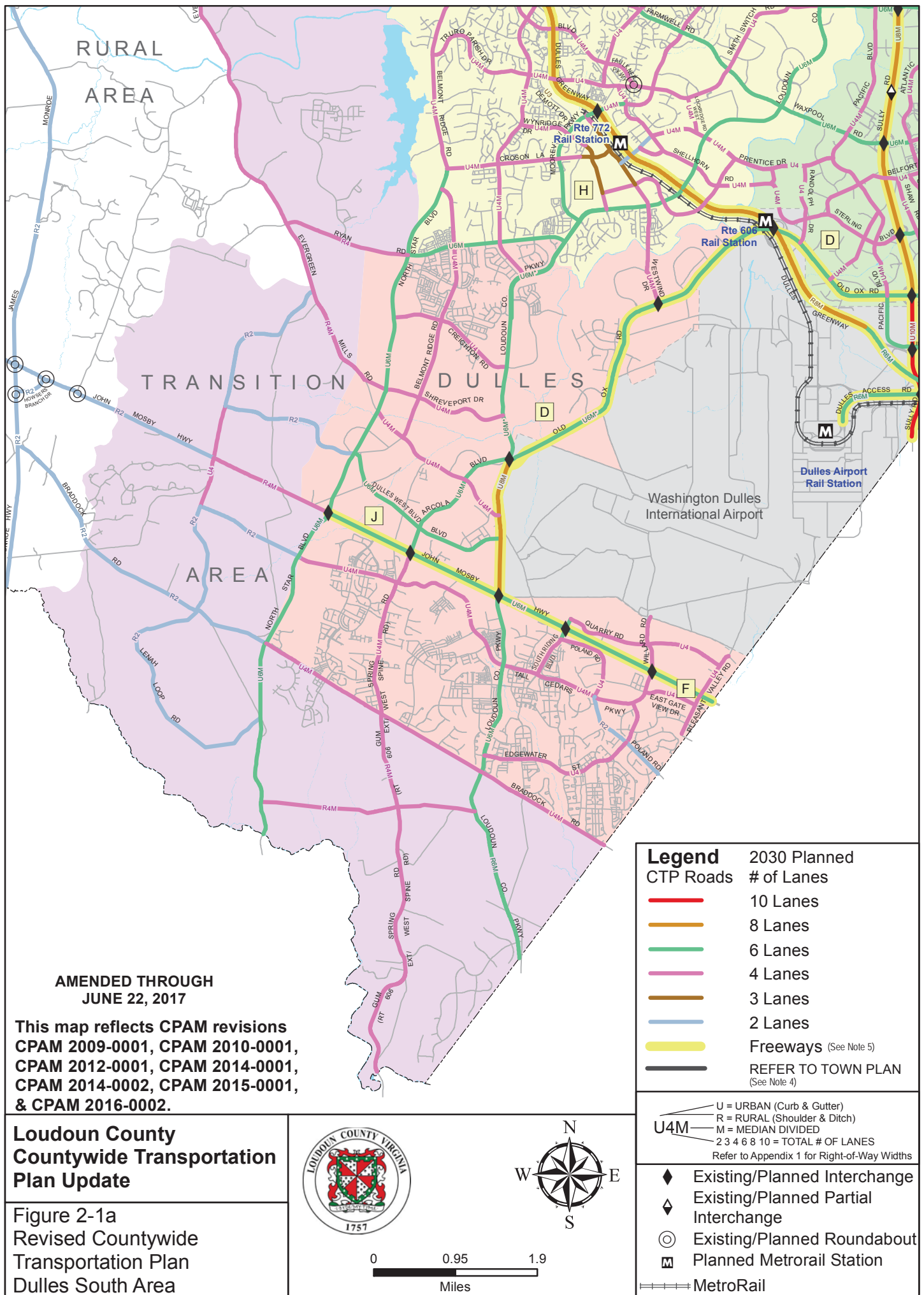
In order to develop the revised road network, the County employed the industry-accepted technique of computer modeling to forecast future travel demand on its roads and along key corridors. These forecasts are based on observed travel patterns and behaviors, anticipated growth in population, households and employment, and the characteristics of the existing and planned roadway network. The forecasts draw from data from within the County as well as data from surrounding jurisdictions.

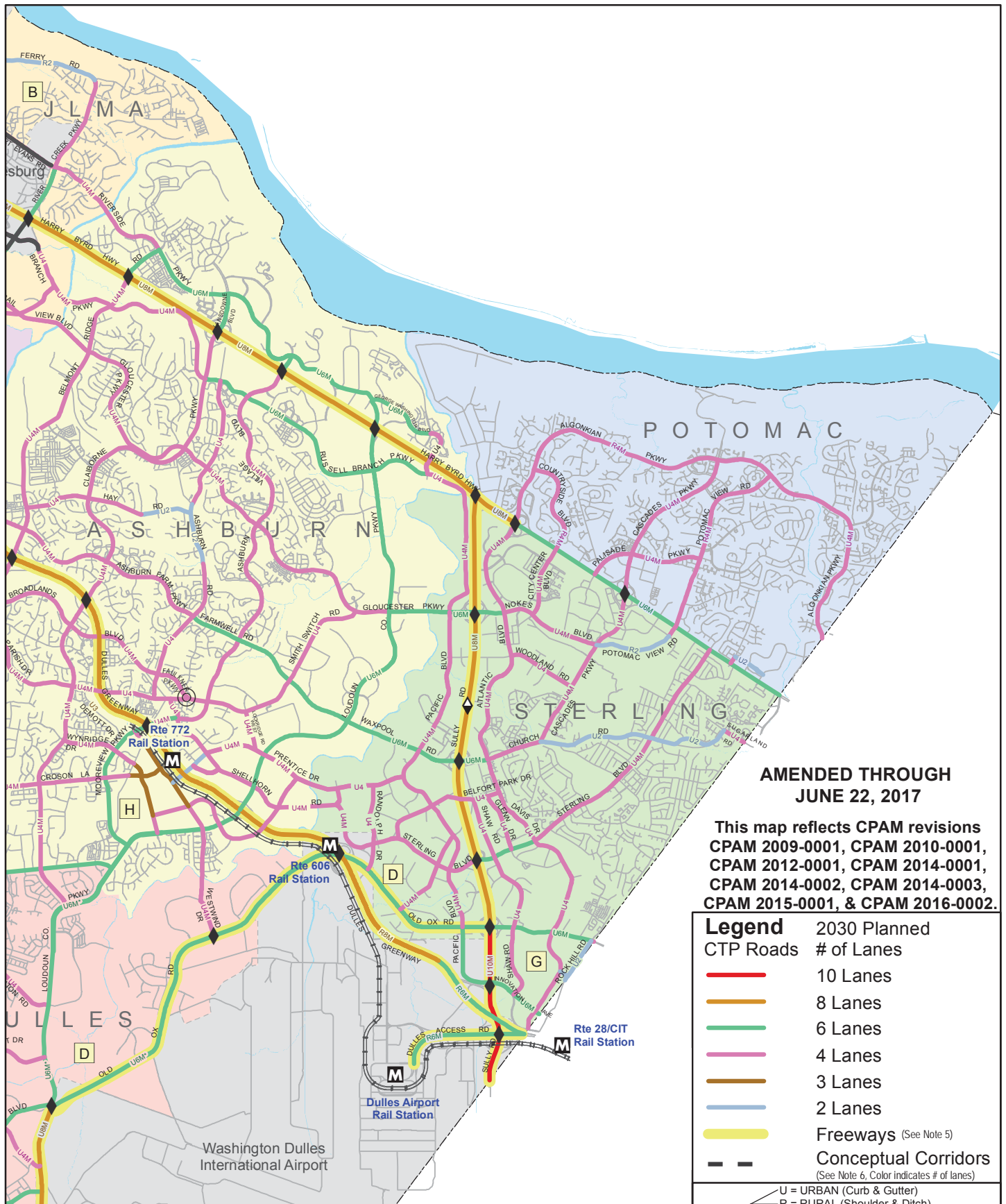
The extent of improvements needed within the network and along particular corridors was guided in large part by the adequacy of a given road facility's projected Level of Service (LOS), obtained from the computer model output. Level of Service is defined in the *Highway Capacity Manual* as "a qualitative measure describing operational conditions within a traffic stream; generally described in terms of such factors as speed and travel time, freedom to maneuver, traffic interruptions, comfort and convenience, and safety." In essence, it is a calculation that describes how well a road segment is able to support travel demand as measured by the volume of vehicles on that road over a certain period of time (note: LOS can also be measured for intersections, however, the computer modeling exercise for the CTP only considers road segments). Level of Service is measured on a scale of A through F, with A being the best, and F being the worst. In this plan, adequate LOS is defined as LOS D or better. Inadequate LOS is defined as LOS E or worse (LOS F). The County has chosen this standard because in situations where level of service is worse than LOS D, traffic conditions become unstable, disrupting travel speeds and limiting freedom to maneuver, resulting in severe congestion. If a particular road segment was shown to have an inadequate LOS, improvements were considered and evaluated for effectiveness in improving operations. If successful, these improvements were considered for incorporation into the network. While LOS played a significant role in determining where improvements were necessary, the need to enhance the roadway network was also balanced with consideration by staff and County leadership as to whether such improvements were deemed practical, possible (given environmental constraints) and/or appropriate, given the context. It should also be noted that existing road policies play a role in shaping the road network. Finally, recommended changes were submitted to the Virginia Department of Transportation (VDOT) for review and comment in conformance with §15.2-2222.1 of the Virginia Code and VDOT's *Traffic Impact Analysis Regulations Administrative Guidelines*. A detailed review of the analysis process is included in Appendix 2.

II. The Road Network

A. Countywide Transportation Plan Map

The structure of the revised road network is described graphically by the CTP map, which has been divided into sections for ease of use and is shown in Figures 2-1a-g. It should be noted that the road network featured on the CTP map and within this document consists of what are referred to as "CTP roads." CTP roads include those roads that have a significant impact on the function of the network, classified as





**AMENDED THROUGH
JUNE 22, 2017**

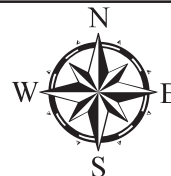
This map reflects CPAM revisions
CPAM 2009-0001, CPAM 2010-0001,
CPAM 2012-0001, CPAM 2014-0001,
CPAM 2014-0002, CPAM 2014-0003,
CPAM 2015-0001, & CPAM 2016-0002.

| Legend | |
|---------------------------------------|--|
| 2030 Planned CTP Roads | # of Lanes |
| — | 10 Lanes |
| — | 8 Lanes |
| — | 6 Lanes |
| — | 4 Lanes |
| — | 3 Lanes |
| — | 2 Lanes |
| — | Freeways (See Note 5) |
| --- | Conceptual Corridors (See Note 6, Color indicates # of lanes) |

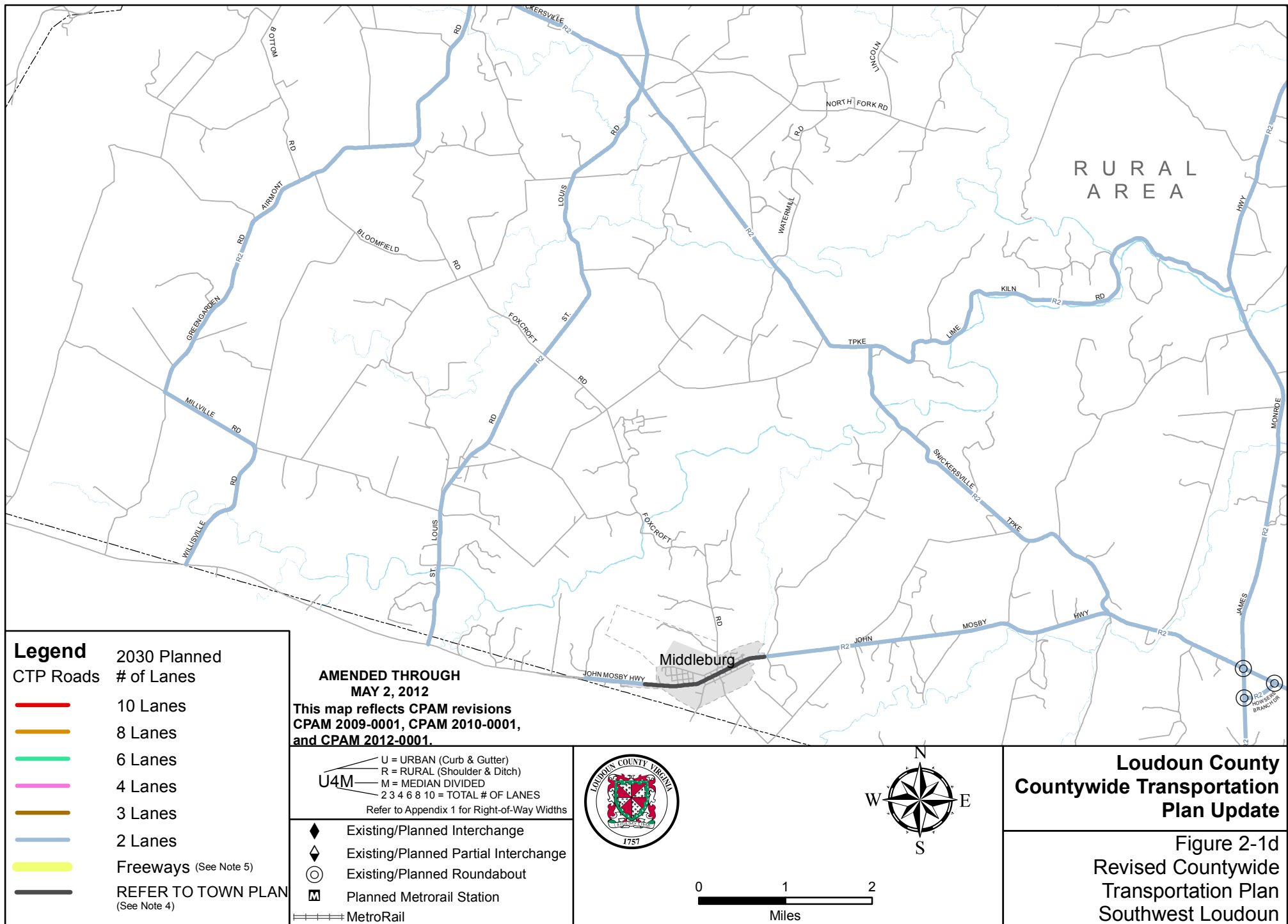
| | |
|--|--------------------------------------|
| U4M* | U = URBAN (Curb & Gutter) |
| | R = RURAL (Shoulder & Ditch) |
| | 4 LANES IN 120' RIGHT OF WAY OR |
| | 6 LANES IN 200' RIGHT OF WAY |
| | M = MEDIAN DIVIDED |
| 2 3 4 6 8 10 = TOTAL # OF LANES | |
| ◆ | Existing/Planned Interchange |
| ◆ | Existing/Planned Partial Interchange |
| ◎ | Existing/Planned Roundabout |
| M | Planned Metrorail Station |
| | MetroRail |

Loudoun County Countywide Transportation Plan Update

Figure 2-1b
Revised Countywide
Transportation Plan
Eastern Loudoun Area

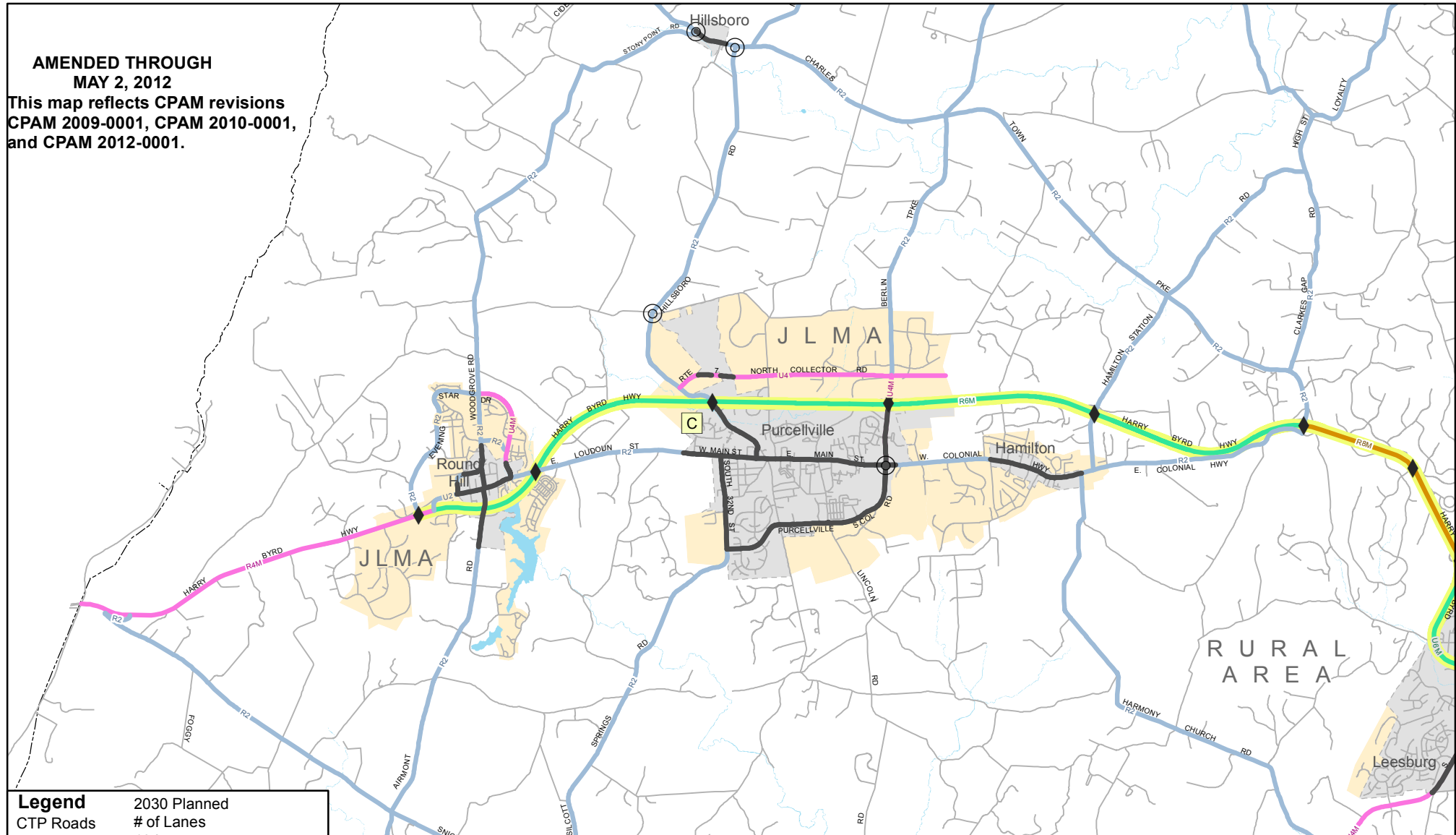


0 0.95 1.9
Miles



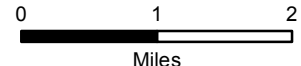
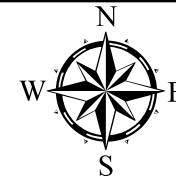
AMENDED THROUGH
MAY 2, 2012

This map reflects CPAM revisions
CPAM 2009-0001, CPAM 2010-0001,
and CPAM 2012-0001.



| Legend | 2030 Planned CTP Roads |
|--------|------------------------------------|
| | # of Lanes |
| | 10 Lanes |
| | 8 Lanes |
| | 6 Lanes |
| | 4 Lanes |
| | 3 Lanes |
| | 2 Lanes |
| | Freeways (See Note 5) |
| | REFER TO TOWN PLAN (See Note 4) |

| | |
|-----|---|
| U4M | U = URBAN (Curb & Gutter) R = RURAL (Shoulder & Ditch) M = MEDIAN DIVIDED 2 3 4 6 8 10 = TOTAL # OF LANES Refer to Appendix 1 for Right-of-Way Widths |
| ◆ | Planned Interchange |
| ◈ | Existing/Planned Partial Interchange |
| ○ | Planned Roundabout |
| M | Planned Metrorail Station |
| | Metrorail |

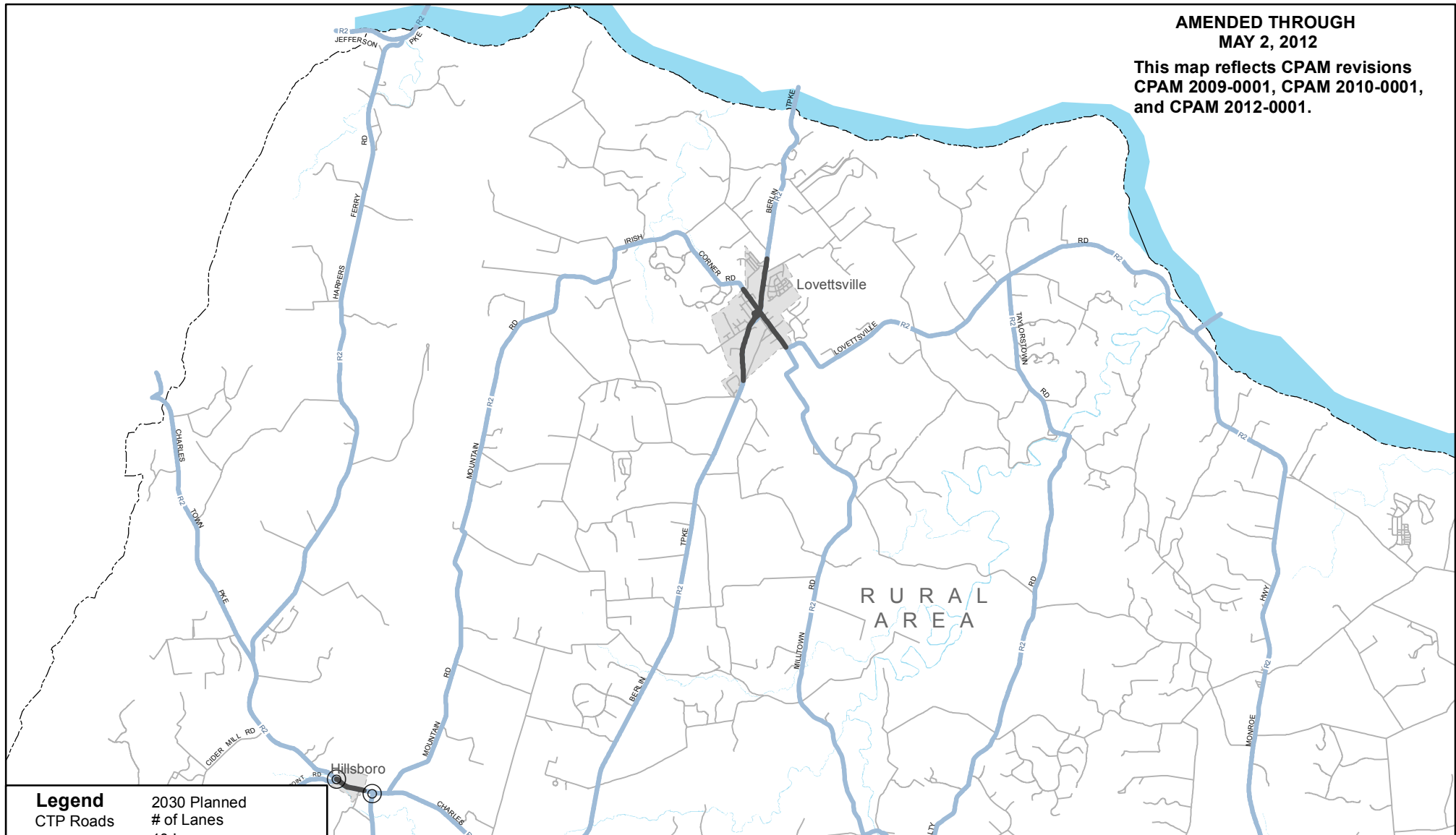


Loudoun County Countywide Transportation Plan Update

Figure 2-1e
Revised Countywide
Transportation Plan
Western Loudoun

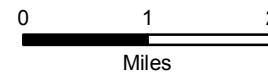
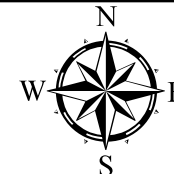
AMENDED THROUGH
MAY 2, 2012

This map reflects CPAM revisions
CPAM 2009-0001, CPAM 2010-0001,
and CPAM 2012-0001.



- Legend**
- CTP Roads
- 10 Lanes
 - 8 Lanes
 - 6 Lanes
 - 4 Lanes
 - 3 Lanes
 - 2 Lanes
 - Freeways (See Note 5)
 - REFER TO TOWN PLAN (See Note 4)

- U4M
- U = URBAN (Curb & Gutter)
 - R = RURAL (Shoulder & Ditch)
 - M = MEDIAN DIVIDED
 - 2 3 4 6 8 10 = TOTAL # OF LANES
 - Refer to Appendix 1 for Right-of-Way Widths
 - Planned Interchange
 - Existing/Planned Partial Interchange
 - Planned Roundabout
 - Planned Metrorail Station
 - MetroRail



Loudoun County Countywide Transportation Plan Update

Figure 2-1f
Revised Countywide
Transportation Plan
Northwest Loudoun

NOTES

GENERAL NOTES:

1. Planned roadway alignments shown are conceptual and subject to further engineering. Alignments will be further refined as part of the planning process and through the land development application process.
2. For information on specific transportation policies, see the Countywide Transportation Plan.
3. For additional information concerning specific roadways, see the Planning Guidelines for Major Roadways, Appendix 1 for the Transportation Plan.
4. Reference Town Plans for specific roadways and their elements within town limits.
5. The Freeway network will be considered for further study of alternate lane operations which may include the dedication of high-occupancy vehicle and/or express busway use when new lanes are added.

SITE SPECIFIC NOTES:

- A. The alignments and other design characteristics of Crosstrail Boulevard and Cochran Mill Road will be studied in consultation with the Town of Leesburg and VDOT.
- B. Edwards Ferry Road will be studied for alternate typical sections in consultation with the Town of Leesburg and VDOT and with consideration of historic and scenic resources.
- C. Location of the Route 7/Route 690 Interchange to be determined by a later study in consultation with the Town of Purcellville and VDOT. A Western Collector Road is being considered in this vicinity by the Town of Purcellville as part of its ongoing planning efforts. County consideration of this proposed facility is pending completion of the Town Plan.
- D. Local access, interchange locations and ultimate alignment of Route 606 between Route 28 and Loudoun County Parkway to be determined by later study with consideration of adjacent development/stakeholders.
- E. Location of the Western Round Hill Route 7 Interchange and six lane transition to be determined by a later study in consultation with the Town of Round Hill and VDOT.
- F. Grade separated options at the intersection of Route 50 and Route 609 to be explored by a later study.
- G. The planned road network in the area bounded by the Dulles Toll Road, Route 28, Route 606 and the Fairfax County line was determined in coordination with Fairfax County and the Town of Herndon. The planned road network was incorporated into the Countywide Transportation Plan as part of CPAM 2009-0001, Route 28 Keynote Employment Policies.
- H. Mooreview Parkway to be constructed as a U4M section between Croson Lane and Old Ryan Road to function as a U6M section in tandem with the parallel segment of Old Ryan Road.
- I. Grade separated and/or roundabout options at the intersection of US Route 15 (Leesburg Bypass) and US Route 15 Business (North King Street) to be explored by later study.
- J. Functionality of planned interchanges within the Route 50 limited access corridor between Loudoun County Parkway and North Star Boulevard to be reviewed by later study.



AMENDED THROUGH MARCH 6, 2018

This map reflects CPAM revisions: CPAM 2009-0001, CPAM 2010-0001, CPAM 2012-0001, CPAM-2013-0001, CPAM 2014-0001, CPAM 2014-0002, CPAM-2014-0003, CPAM-2015-0001, CPAM-2016-0002, CPAM-2016-0003, CPAM-2017-0002.

**Loudoun County
Countywide Transportation
Plan Update**

Figure 2-1g
Revised Countywide
Transportation Plan
Map Notes



arterials and collectors. These roads require careful long-range planning to ensure that the network functions adequately as they carry the majority of the traffic throughout the County. Local roads are not individually considered in the analysis of the County road network, although their net effect on the operation of the network is taken into account in the analysis process. For reference, local roads are shown on the map in a subdued gray color, and the CTP document itself contains some policies regarding specific aspects of local roads. Local streets are included as well.

B. Countywide Transportation Plan Road Planning Guidelines

The structure of the revised road network is further detailed in Appendix 1, Planning Guidelines for Major Roadways Countywide, which includes the functional classification, number of lanes, right-of-way required, planning-level design criteria, and bicycle/pedestrian facilities guidelines for each road segment in its current, interim, and ultimate conditions. Appendix 1 will be updated as necessary and may be modified by resolution of the Board of Supervisors through land development applications or as otherwise deemed appropriate by the Board.

III. Road Network Concepts and Policies

Within this section are contained the road network concepts and policies that provide for the orderly development and implementation of the road network as defined on the CTP map and described in Appendix 1. The policies contained herein are critical to ensuring that the long-range vision for the network comes to fruition.

A. Functional Classification and Access Management

1. Functional Classification

The *2010 Countywide Transportation Plan* employs the highway functional classification system developed by the Federal Highway Administration (FHWA) and used by the Virginia Department of Transportation (VDOT) to classify public roads. The functional classification of each CTP road in its current, interim and ultimate condition is included in Appendix 1. Functional Classification is defined by FHWA as “the process by which streets and highways are grouped into classes, or systems, according to the character of service they are intended to provide.” Each highway is assigned a functional classification based on the highway’s intended purpose of providing priority to through traffic movement or adjoining property access. The functional classification system groups highways into three basic categories identified as (1) arterial, with the function to provide mostly through movement of traffic; (2) collector, with the function of supplying a combination of through movement and access to property; and (3) local, with the function of providing mostly access to property. As previously mentioned, local roads are not considered in the analysis of the County local network, and therefore local roads are not included in Appendix 1. The *2010 CTP* is the County’s guiding document with respect to the functional classification of roads. References in all county ordinances and area plans are to be consistent with the functional classifications in Appendix 1.

2. Access Management

As defined by VDOT, Access Management is the systematic control of the location, spacing, design, and the operation of entrances, median openings, traffic signals, and interchanges for the purpose of providing vehicular access to land development in a manner that preserves the safety and efficiency of the transportation system. Access management allows for informed decisions to try to accommodate parcel access while maintaining safety and in most cases the capacity of the road network. The County works closely with the development community and VDOT to address concerns and seek solutions for parcel access issues. The County defers to VDOT access management regulations as defined in *VDOT Access Management Regulations: Principal Arterials* and *VDOT Access Management Regulations: Minor Arterials, Collectors and Local Streets*.



Functional Classification and Access Management Policies

1. The County will use the Federal Highway Administration/Virginia Department of Transportation (FHWA/VDOT) functional classification system in the *2010 Countywide Transportation Plan* for the purpose of planning a coordinated highway network. The description of highways in all applicable County ordinances and planning documents also will be consistent with this functional classification system.
2. The road network will consist of a coordinated hierarchy of arterial, collector and local roads. Access to the arterial network will be primarily from collector roads. Local roads will access the collector system directly and not the arterial network in the Suburban Policy Area and wherever possible in the Transition and Rural Policy Areas.
3. The County supports access management techniques that focus on context-sensitive and economical designs that emphasize local access while balancing safety and capacity in order to promote the needs of Loudoun.
4. The County will work closely with residents, businesses, the development community and VDOT to address access concerns and seek solutions for parcel access issues.

B. Road Policies by Geographic Policy Area

The *2010 CTP* carries forward the County's commitment to coordinate road network policies with land use, environmental policies and heritage preservation policies of the *Revised General Plan*. In keeping with the land use policies of the *Revised General Plan*, the CTP presents specific policies for roads according to the four geographic Policy Areas as defined in the *Revised General Plan*: Suburban, Transition, Rural, and the Joint Land Management Areas (JLMAs) that exist around four of the County's seven incorporated Towns. Additional discussion of the road improvements favored by the incorporated Towns as well as specific road and transportation policies for the four JLMA areas are provided in Chapter 9 of the *Revised General Plan*. The Policy Areas are shown graphically in Figures 2-1a-g.

The policies in this section are intended to support the County's proposed land use by ensuring that adequate transportation facilities exist to serve the mobility needs of residents, visitors and businesses in each of the Policy Areas. For a complete list of planned roadway improvements, including detailed descriptions of each road and its current, interim, and ultimate planned improvements, refer to *Appendix 1 (Planning Guidelines for Major Roadways)*. Priority status (i.e., near-term, intermediate, and long-term), projected timing and estimated costs for completion of the improvements outlined in *Appendix 1* are contained in *Appendix 3 (Road Improvement Priorities)*. *Appendix 3* also contains a list of top priorities.

1. Suburban Policy Area Roads

As noted in Chapter 6 of the *Revised General Plan*, the Suburban Policy Area is located in the easternmost portion of the County, where most of the County's residential and commercial growth has occurred over the past twenty years. The ultimate planned roadway network essential to support the development envisioned by the *Revised General Plan* in the Suburban Policy Area and called for by the analysis results from the County's transportation model is specified in the *2010 CTP*. Many major road construction projects are needed to implement this ultimate planned road network. These projects range from operational improvements on existing roadways in established, developed portions of the Suburban Policy Area to construction of entirely new roadways in areas that are currently undergoing initial development. Recommendations for planned road widening's, where discussed below, are based on the Corridor Adequacy Analyses (see *Appendix 2*) conducted in the preparation of this Plan.

The Suburban Policy Area is divided into four distinct communities: Ashburn, Dulles, Potomac, and Sterling. The boundaries of each community are defined largely by natural features and major roads. A description of



each community is provided below, and each community's boundaries are provided in the maps contained in Figures 2-1a-g. Discussion of the most significant roadways and planned improvements within each Community is provided in the following sections.

a. Ashburn Community

The Ashburn Community stretches from the Potomac River north of Lansdowne south to Ryan Road, and from the Broad Run on the east to the Goose Creek and Beaverdam Reservoir on the west. Major roads within the Ashburn Community include **Harry Byrd Highway (VA Route 7)**, the **VA Route 7 Parallel Roads (Riverside Parkway and Russell Branch Parkway)**, the **Dulles Greenway (VA Route 267)**, **Ashburn Road (VA Route 641)**, **Belmont Ridge Road (VA Route 659)**, **Broadlands Boulevard/Faulkner Parkway (VA Route 640)**, **Croson Lane (VA Route 645)**, **Devin Shafron Drive**, the **Greenway East-West Connector (Wynridge Drive/Claude Moore Avenue)**, **Gloucester Parkway (VA Route 2150)**, the **Greenway Loop Road (Centergate Drive/Barrister Street)**, the **Greenway Transit Connector**, **Hay Road (VA Route 642)**, **Ashburn Village Boulevard (VA Route 2020/VA Route 772)/Mooreview Parkway (VA Route 2298)**, **Lansdowne Boulevard (VA Route 2400)/Claiborne Parkway (VA Route 901)**, **Lockridge Road West (VA Route 789 Extended)**, **Loudoun County Parkway (VA Route 607)**, **Moorefield Boulevard/Westwind Drive (VA Route 645 Extended)**, **Prentice Drive (VA Route 1071/VA Route 1071 Extended/VA Route 789 Extended)**, **Ryan Road (VA Route 772)**, **Shellhorn Road (VA Route 643/VA Route 643 Extended)**, **Smith Switch Road (VA Route 1950)**, **Sycolin Road/Ashburn Farm Parkway/Farmwell Road/Waxpool Road (VA Route 625)**, and **Waxpool Road (VA Route 640/VA Route 2119)/Truro Parish Drive (VA Route 2119)**.

Although much of the CTP road network within the Ashburn Community has been constructed, several key projects remain yet to be completed. These planned improvements are intended to improve traffic flow on existing roadways such as Harry Byrd Highway (VA Route 7) and Belmont Ridge Road (VA Route 659) as well as complete missing roadway links, particularly those across the Broad Run and in the vicinity of planned Metrorail stations in the Dulles Greenway (VA Route 267) corridor. Significant planned roadway connections and improvements within the Ashburn Community include:

- **VA Route 7 (Harry Byrd Highway)** traverses the northern portion of the Ashburn Community between the Broad Run (at VA Route 28) and the Goose Creek, just east of the Town of Leesburg. This segment of VA Route 7 is part of the larger east-west corridor that traverses the entire County. Between VA Route 28 and the Goose Creek, VA Route 7 is currently a six-lane divided facility, and is gradually being converted to a limited access highway (the limited access segment is planned to extend westward to the Leesburg Bypass in the Town of Leesburg). The entire segment of VA Route 7 between VA Route 28 and the Leesburg Bypass is planned to be widened to eight lanes, and HOV operations will be considered for the new lanes. Within the Ashburn Community, grade-separated interchanges are currently in place at VA Route 28, Loudoun County Parkway (VA Route 607), and Claiborne Parkway (VA Route 901)/Lansdowne Boulevard (VA Route 2400). Additional interchanges are planned at Ashburn Village Boulevard (VA Route 2020) and Belmont Ridge Road (VA Route 659). Construction funding for the Loudoun County Parkway (VA Route 607) interchange and design funding for the planned Belmont Ridge Road (VA Route 659) interchange was approved by County voters as part of a Local Road Bond Referendum in November 2006. Private sector developers constructed the Claiborne Parkway (VA Route 901)/Lansdowne Boulevard (VA Route 2400) interchange as part of nearby development approvals; the Ashburn Village Boulevard (VA Route 2020) interchange is anticipated to be constructed in the same manner. An overpass across VA Route 7 (with no access) is planned at George Washington Boulevard (between the VA Route 28 and the Loudoun County Parkway (VA Route 607) interchanges).
- The **VA Route 7 Parallel Roads (Riverside Parkway (VA Route 2401) & Russell Branch Parkway (VA Route 1061))** will provide long-term access to developments along the VA Route 7 corridor once all interchanges have been completed and the main road becomes a limited access facility. Each parallel road is planned to be a minimum of four lanes (some segments are planned to be six lanes where forecasted volumes warrant additional capacity). Presently, gaps remain in each of these roadways, though construction is underway and/or programmed on some of these missing links. Currently,



Riverside Parkway (VA Route 2401) (the VA Route 7 North Collector Road) has been completed from west of Goose Creek east through Lansdowne to Ashburn Village Boulevard (VA Route 2020 Extended). East of this point, Riverside Parkway (VA Route 2401) is planned to follow a new alignment from Smith Circle (VA Route 823) east to existing Loudoun County Parkway (VA Route 607) in the vicinity of George Washington Boulevard (VA Route 1050). Further to the east, within the University Center development, existing **George Washington Boulevard (VA Route 1050)** also serves as a segment of the VA Route 7 North Collector Road between Loudoun County Parkway (VA Route 607) and existing Riverside Parkway (VA Route 1052); George Washington Boulevard will ultimately extend south over VA Route 7 via a new overpass and connect with Russell Branch Parkway. Regarding **Russell Branch Parkway (VA Route 1061)** (the VA Route 7 South Collector Road), the roadway is currently constructed from within the Belmont development east to Ashburn Road (VA Route 641) (Belmont is anticipated to construct the roadway from its current western terminus west to Belmont Ridge Road in conjunction with future development). The County is currently undertaking a project to construct the segment of Russell Branch Parkway from Ashburn Road (VA Route 641) east to Ashburn Village Boulevard (VA Route 2020), where the roadway is in place through the Ashbrook development. The One Loudoun development has constructed the road from Ashbrook east to Loudoun County Parkway (VA Route 607). East of Loudoun County Parkway (VA Route 607), a gap remains to be constructed from east of Richfield Way across Broad Run to connect with the planned alignment of Pacific Boulevard (VA Route 1036) (the VA Route 28 West Parallel Road) in the Sterling Community. This segment is anticipated to be constructed as part of the approved Kincora development.

- **Belmont Ridge Road (VA Route 659)** is a critical north-south corridor along the western boundary of the Ashburn Community. Currently, Belmont Ridge Road (VA Route 659) is largely a two-lane rural road from VA Route 7 south to the future intersection with Croson Lane (VA Route 645), just north of the Brambleton development. The roadway is planned to ultimately be widened to four lanes. Funding is anticipated through a combination of public sector funds and private sector development proffers; some segments of four-lane divided roadway have already been constructed just north and south of the Dulles Greenway (VA Route 267) interchange in conjunction with adjacent developments.
- **Waxpool Road (VA Route 625)** is currently a six-lane divided roadway from VA Route 28 (in the Sterling Community) west to Loudoun County Parkway (VA Route 607), and a four-lane divided facility west to Smith Switch Road (VA Route 1950) (the corridor continues west from this point as **Farmwell Road (VA Route 625)**, which is also a four-lane divided roadway). Waxpool Road/Farmwell Road (VA Route 625) are ultimately planned to be widened to six lanes as far west as Ashburn Road (VA Route 641), though no funding for this future widening has been identified.
- **Loudoun County Parkway (VA Route 607)** is currently a four- to six-lane divided facility throughout the Ashburn Community, from George Washington Boulevard (VA Route 1050) south to Ryan Road (VA Route 772), with the exception of a short two-lane segment just north of the W & OD Trail. Ultimately Loudoun County Parkway (VA Route 607) is planned to be widened to six lanes from George Washington Boulevard (VA Route 1050) south to Old Ox Road (VA Route 606) (in the Dulles Community).
- **Gloucester Parkway (VA Route 2150)** between Loudoun County Parkway (VA Route 607) and VA Route 28, is another critical east-west roadway link across Broad Run to the Sterling Community. Completion of this segment, ultimately to be six lanes, is anticipated to be constructed in conjunction with future development and would provide the last missing link in the Gloucester Boulevard (VA Route 2150) corridor. The remainder of Gloucester Parkway (VA Route 2150), from Belmont Ridge Road (VA Route 659) east to Loudoun County Parkway (VA Route 607), has already been constructed to its ultimate four-lane condition.
- **Ashburn Village Boulevard (VA Route 2020/VA Route 772)**, another north-south connection through the Ashburn Community, is currently built to its ultimate a four-lane divided condition from VA Route 7 south to the Dulles Greenway (VA Route 267), with the exception of a short two-lane segment just



north of Waxpool Road (VA Route 625). Widening of this remaining segment to four lanes is anticipated to be completed in conjunction with adjacent development.

- **Claiborne Parkway (VA Route 901)**, another north-south connection through the Ashburn Community, has been completed to its ultimate four-lane divided condition from the VA Route 7 interchange south to Croson Lane (VA Route 645), and an additional segment of the roadway from Ryan Road (VA Route 772) south to Loudoun County Parkway (VA Route 607) (in the Dulles Community) has also been completed. The only remaining gap in the Claiborne Parkway (VA Route 901) corridor is from Croson Lane (VA Route 645) south to Ryan Road (VA Route 772). Funding for construction of this roadway segment has not been identified.
- **Lockridge Road West (VA Route 789 Extended)** will provide an additional north-south connection between Prentice Drive (VA Route 1071 Extended/VA Route 789 Extended) and Waxpool Road (VA Route 640).
- A number of **Metrorail-Related Road Improvements** in the **Dulles Greenway (VA Route 267) Corridor** are contemplated by this Plan. These improvements would complete the planned road network between and proximate to the two planned Metrorail stations along the Dulles Greenway at Route 606 and at Route 772 (the planned Metrorail extension into Loudoun County is discussed in greater detail in Chapter 3). Among the planned road improvements in this area are (1) widening of the **Dulles Greenway (VA Route 267)** to eight lanes from the main toll plaza westward; (2) construction of **Prentice Drive (VA Route 1071/VA Route 1071 Extended/VA Route 789 Extended)** from its existing terminus at Pacific Boulevard (VA Route 1036) to Metro Center Drive, providing a connection between the sites of the future Route 606 and Route 772 Metrorail stations; (3) completion of **Croson Lane** (VA Route 645) as a continuous roadway between Belmont Ridge Road (VA Route 659) and the Moorefield Station development; (4) construction of the **Greenway Transit Connector** within the Moorefield Station and Loudoun Station developments (site of the future Route 772 Metrorail station) between Moorefield Boulevard and Shellhorn Road (VA Route 643), including a bridge over the Dulles Greenway (VA Route 267); (5) construction of **Moorefield Boulevard** within the Broadlands South and Moorefield Station developments between Mooreview Parkway (VA Route 2298) and Loudoun County Parkway (VA Route 607) (opposite Westwind Drive (VA Route 645 Extended)); (6) completion of **Claude Moore Avenue** within the Moorefield Station development from Old Ryan Road (VA Route 772) (opposite the **Greenway East-West Connector (Wynridge Drive)**) to Loudoun County Parkway (VA Route 607); and (7) construction of the **Greenway Loop Road** from Prentice Drive (VA Route 789 Extended / VA Route 1071) over the Dulles Greenway (VA Route 267) and across Loudoun County Parkway (VA Route 607) through the Dulles Parkway Center development to Moorefield Boulevard in the Moorefield Station development. It is anticipated that these roadways will be constructed in conjunction with future development in the area.

b. Dulles Community

The Dulles Community is bounded on the north by the Broad Run watershed boundary, on the south by Braddock Road (VA Route 620), on the east by the Fairfax County line, and on the west by Northstar Boulevard (VA Route 659 Relocated). Major roads within the Dulles Community include **John Mosby Highway (US Route 50)**, the **US Route 50 Parallel Roads (Quarry Road/Glascocock Boulevard and Tall Cedars Parkway (VA Route 2200))**, **Arcola Boulevard (VA Route 606 Extended/West Spine Road)**, **Belmont Ridge Road (Existing VA Route 659)**, **Braddock Road (VA Route 620)**, **Claiborne Parkway (VA Route 901)**, **Creighton Road (VA Route 774)**, **East Gate View Drive**, **Edgewater Street (VA Route 2237)**, **Evergreen Mills Road (VA Route 621)**, **Gum Spring Road Relocated/Gum Spring Road (West Spine Road/Existing VA Route 659/VA Route 606 Extended)**, **Loudoun County Parkway (VA Route 607/VA Route 606)**, **Northstar Boulevard (VA Route 659 Relocated)**, **Old Ox Road (VA Route 606)**, **Pleasant Valley Road (VA Route 609)**, **Poland Road (VA Route 742)**, **Ryan Road (VA Route 772)**, **Shreveport Drive (VA Route 621 Relocated)**, **South Riding Boulevard (VA Route 2201)**, **Westwind Drive (VA Route 645 Extended)** and **Willard Road (VA Route 639 Relocated)**.



Many road construction projects remain to be completed in the Dulles Community, both on existing roadways and on entirely new corridor alignments. Among the most significant projects and future planned roadways are the following:

- **US Route 50 (John Mosby Highway)** is currently a four- to six-lane divided facility through the Dulles Community, from the future location of Northstar Boulevard (VA Route 659 Relocated) in the west to the Fairfax County line in the east. The entirety of US Route 50 within the Dulles Community is planned to be widened to a six-lane limited access facility. Interchanges are planned at Northstar Boulevard (VA Route 659 Relocated), Arcola Boulevard/Gum Spring Road Relocated (West Spine Road/Route 606 Extended), Loudoun County Parkway (VA Route 606), South Riding Boulevard (VA Route 2201), and Tall Cedars Parkway (VA Route 2200)/Willard Road (VA Route 639 Relocated). Grade-separated options are to be explored at Pleasant Valley Road (VA Route 609). No interchanges have been constructed to date, though the November 2006 Local Road Bond Referendum included funding for design of the Loudoun County Parkway (VA Route 606) interchange. VDOT is currently designing improvements to widen US Route 50 to six lanes from Poland Road (VA Route 742) east to Lee Road in Fairfax County; when completed and coupled with the existing six-lane segment currently in place, US Route 50 will be a continuous six-lane section from Loudoun County Parkway (VA Route 606) east into Fairfax County. Additional widening to six lanes to the west of Loudoun County Parkway (VA Route 606) has been proffered as part of approved developments along the corridor.
- **The US Route 50 Parallel Roads (Quarry Road/Glascock Boulevard & Tall Cedars Parkway (VA Route 2200))** will provide long-term access to developments along the US Route 50 corridor once all interchanges have been completed and the main road becomes a limited access facility. Each parallel road is planned to be a minimum of four lanes; some segments (e.g., Glascock Boulevard between Loudoun County Parkway (VA Route 606) and Northstar Boulevard (VA Route 659 Relocated)) are planned to be six lanes where forecasted volumes warrant additional capacity. As of this writing, none of **Quarry Road** or **Glascock Boulevard** (both segments of the US Route 50 North Collector Road) has been constructed; segments of Glascock Boulevard to the west of Loudoun County Parkway (VA Route 606) are anticipated to be completed in conjunction with the approved Dulles Landing, Arcola Center, and Glascock Field developments. **Tall Cedars Parkway (VA Route 2200)** (the primary Route 50 South Collector Road) is largely constructed, though a gap remains between Gum Spring Road (Existing VA Route 659/VA Route 606 Extended) east of the Stone Ridge development and Riding Center Drive in the South Riding development. This gap is anticipated to be completed as part of already proffered or future development in the vicinity. Other roadway segments that function as part of the planned US Route 50 South Collector Road system include **East Gate View Drive** (between Tall Cedars Parkway (VA Route 2200) and Pleasant Valley Road (VA Route 609)) and a segment of **Poland Road** (VA Route 742) (between Tall Cedars Parkway (VA Route 2200) and South Riding Boulevard (VA Route 2201)). Completion of both of these roads is anticipated to occur in conjunction with future development in the area.
- **The Old Ox Road (VA Route 606) Corridor** runs along the western side of Dulles Airport. Much of the existing roadway between VA Route 621 (Evergreen Mills Road) and the Dulles Greenway (VA Route 267) is a two-lane facility which carries significant traffic volumes around the airport. The roadway is planned to be widened to six lanes from the future Loudoun County Parkway (VA Route 607) intersection to the Dulles Greenway (VA Route 267) (and east to VA Route 28 in the Sterling Community). As the roadway is widened, opportunities for parallel or frontage roads and access consolidation need to be explored along Old Ox Road (VA Route 606) (between Loudoun County Parkway (VA Route 607) and VA Route 28) in order to facilitate local access when the roadway is converted to a limited access facility. HOV operations will also be considered for the final two lanes when the six-lane facility is constructed.
- **Loudoun County Parkway (VA Route 607/VA Route 606)** is a major north-south corridor that, when completed between the vicinity of Claiborne Parkway (VA Route 901) (south of the Dulles Greenway (VA Route 267)) and Old Ox Road (VA Route 606) (north of US Route 50), will facilitate much greater access in a large portion of the Dulles Community due primarily to an additional road connection across



the Broad Run. This remaining segment is proffered to be completed in conjunction with adjacent development in the area. This segment of Loudoun County Parkway, along with the adjacent existing segments connecting to the Dulles Greenway (VA Route 267) to the north, is planned to be ultimately widened to a six-lane facility. The segment of Loudoun County Parkway which follows the existing Route 606 alignment is planned to be widened to an eight-lane roadway; HOV operations will be considered for the final two lanes of this segment. Loudoun County Parkway (VA Route 606) currently continues south from US Route 50 to Braddock Road (VA Route 620), and is planned to be widened from its existing four lanes to a six-lane roadway. South of Braddock Road (VA Route 620), Loudoun County Parkway (VA Route 606) is planned to continue as an ultimate six-lane roadway into the Transition Policy Area and Fairfax County.

- **Arcola Boulevard/Gum Spring Road Relocated (VA Route 606 Extended/West Spine Road)** is a planned new roadway corridor to run between the future Old Ox Road (VA Route 606)/Loudoun County Parkway (VA Route 607) intersection and US Route 50 just east of Existing VA Route 659 (Gum Spring Road), and continuing south to join the present alignment of Existing VA Route 659 (Gum Spring Road) at Tall Cedars Parkway (VA Route 2200). South of this point, this roadway corridor is planned to follow the alignment of **Gum Spring Road (Existing VA Route 659)** south to Braddock Road (VA Route 620) and into the Transition Policy Area and Prince William County. North of US Route 50, this roadway (Arcola Boulevard) is ultimately planned to be a six-lane divided facility; south of US Route 50, this roadway (Gum Spring Road Relocated/Gum Spring Road) is planned as a four-lane divided facility. At present, no construction to the north of US Route 50 has taken place, though this segment of roadway is anticipated to be completed in conjunction with the approved Arcola Center and Brambleton developments. South of US Route 50, a half-section has been constructed between US Route 50 and Tall Cedars Parkway (VA Route 2200). From Tall Cedars Parkway (VA Route 2200) south to Braddock Road (VA Route 620), the alignment of Gum Spring Road (Existing VA Route 659) has been widened to a four-lane divided section by private sector proffers.
- **Northstar Boulevard (VA Route 659 Relocated)**, a new north-south corridor along the western edge of the Dulles Community, is planned to run from the northern edge of the Brambleton development (just south of Croson Lane (VA Route 645) in the Ashburn Community) south to Braddock Road (VA Route 620), and continuing south into the Transition Policy Area and Prince William County. Currently, a four lane divided section of this roadway (from its northern terminus at Belmont Ridge Road (VA Route 659) south to future Shreveport Drive (VA Route 621 Relocated) in the Brambleton development) has been constructed. A two lane section between Tall Cedars Parkway (VA Route 2200) and Braddock Road (VA Route 620) has also been constructed. Within the Dulles Community, the road is ultimately planned to be a six-lane divided facility and is anticipated to be constructed in conjunction with future development along the corridor.
- **Belmont Ridge Road (VA Route 659)**, between the northern terminus of Northstar Boulevard (VA Route 659 Relocated) and Evergreen Mills Road (VA Route 621) west of Arcola, is planned to be a continuous four-lane divided roadway which will provide access through the Brambleton development and adjacent areas. The segment of roadway within Brambleton (south to beyond Creighton Road (VA Route 774)) has already been constructed to its ultimate four-lane configuration, and widening of the remaining segment south to Evergreen Mills Road (VA Route 621) is anticipated to be completed in conjunction with future development in the area.
- **Shreveport Drive (VA Route 621 Relocated)** is a planned east-west roadway that will traverse the southern part of the Brambleton development from just west of future Northstar Boulevard (VA Route 659 Relocated) east to Loudoun County Parkway (VA Route 606), providing an alternate route for traffic around the Village of Arcola. Construction of this four-lane divided roadway is anticipated to be completed in conjunction with the approved Brambleton development.
- **Evergreen Mills Road (VA Route 621)** is planned to be widened to a four-lane divided facility from Northstar Boulevard (Route 659 Relocated) east through Arcola to Loudoun County Parkway (VA Route 606). Funding to complete this widening has not been identified.



- **Westwind Drive/Ladbrook Drive (VA Route 645 Extended)** will provide an additional road connection across Broad Run between Loudoun County Parkway (VA Route 607) (in the Ashburn Community) and the Old Ox Road (VA Route 606) corridor. Future construction of this four-lane divided road segment and bridge crossing has been proffered as part of the approved Moorefield Station development.
- **Braddock Road (VA Route 620)** forms the dividing line between the Dulles Community and the Transition Policy Area to the south. Braddock Road (VA Route 620) is currently built to its interim two-lane section from the Fairfax County line west to the vicinity of Northstar Boulevard (VA Route 659 Relocated). The entirety of Braddock Road (VA Route 620) in the Dulles Community (from the Fairfax County line west to Northstar Boulevard (VA Route 659 Relocated)) is planned to be widened to a four-lane divided roadway in the future.

c. Potomac Community

The Potomac Community includes the area north of VA Route 7 to the Potomac River between the Fairfax County line and the Broad Run. Major roads within the Potomac Community include **Harry Byrd Highway (VA Route 7)**, **Algonkian Parkway (VA Route 1582)**, **Cascades Parkway (VA Route 1794)**, **Countryside Boulevard (VA Route 1570)**, **Palisade Parkway (VA Route 1795)** and **Potomac View Road (VA Route 637)**.

Virtually the entire regional road network within the Potomac Community has been constructed to the ultimate lane configurations identified in this Plan, and the focus of future efforts in this area will be on operational and safety improvements. Two major roads in the Potomac Community are the focus of such measures:

- **Algonkian Parkway (VA Route 1582)** runs from VA Route 7 opposite Atlantic Boulevard (VA Route 1902) east to the Fairfax County line, where it continues as Holly Knoll Drive south to VA Route 7 opposite the Fairfax County Parkway. The roadway is built to its ultimate planned four-lane divided condition and provides access to much of the Potomac Community, including the Countryside, Cascades, and Lowes Island developments. VDOT recently conducted a corridor study to identify measures to improve pedestrian safety and move traffic more effectively along the entire 6.7-mile corridor. The study examined all 31 intersections along this roadway and recommended a number of both short-term, low-cost treatments such as signage and pavement markings as well as long-term improvements such as physical changes to the roadway and signal structures. As of this writing, the study is currently under review by the Board of Supervisors, who, in conjunction with VDOT, will determine how these recommended improvements will be implemented.
- **Harry Byrd Highway (VA Route 7)** forms the southern boundary of the Potomac Community and is part of the larger major east-west corridor which traverses the entire County. It is currently built to its ultimate planned six-lane divided, controlled access condition. Unlike the segment of VA Route 7 to the west within the Ashburn Community, the segment of VA Route 7 (between the Algonkian Parkway (VA Route 1582)/Atlantic Boulevard (VA Route 1902) interchange and the Fairfax County line) is not envisioned to become limited access, and no additional interchanges are planned to be constructed. Currently, the County and VDOT are focused on operational improvements such as additional turn lanes, the addition of channelization in certain locations, median closures, and access restrictions to improve traffic flow between Potomac View Road (VA Route 637) and Lakeland Drive (VA Route 821). Such improvements are intended to better manage traffic volumes which use this segment of VA Route 7, particularly between Potomac View Road (VA Route 637) and Sterling Boulevard (VA Route 846) (as there is no alternate route or parallel road between these two intersections). Related improvements are also being studied to improve ingress/egress and operations at the entrance to Northern Virginia Community College (Campus Drive (VA Route 391)). A second entrance to the NVCC Campus has been constructed from Potomac View Road (VA Route 637).



The only remaining planned regional road segment within the Potomac Community which remains incomplete is a portion of the **VA Route 7 North Collector Road (Maple Leaf Place/Jennings Farm Drive)** between Augusta Drive (VA Route 2700) and Cedar Drive (VA Route 821). As part of an approved rezoning application, it was determined that the right-of-way would be reserved to allow for possible future construction of this road segment.

d. Sterling Community

The Sterling Community includes the area from Washington Dulles International Airport north to VA Route 7 between the Fairfax County line and the Broad Run. Major roads within the Sterling Community include **Harry Byrd Highway (VA Route 7), Sully Road (VA Route 28), the VA Route 28 Parallel Roads (Atlantic Boulevard (VA Route 1902)/Davis Drive (VA Route 868) and Pacific Boulevard (VA Route 1036)), Cascades Parkway (VA Route 637/VA Route 1794), Church Road (VA Route 625), City Center Boulevard (VA Route 1949), Glenn Drive (VA Route 864), Gloucester Parkway (VA Route 2150), Innovation Avenue (VA Route 209), Moran Road (VA Route 634/VA Route 634 Extended), Nokes Boulevard (VA Route 1793), Old Ox Road (VA Route 606), Potomac View Road (VA Route 637), Relocation Drive (VA Route 775), Rock Hill Road (VA Route 605), Shaw Road (VA Route 636), Sterling Boulevard (VA Route 846), Sugarland Road (VA Route 604), Waxpool Road (VA Route 625), and Woodland Road (VA Route 679).**

While much of the regional road network within the Sterling Community has been completed, additional improvements and widening are planned to meet demand on existing roadways such as VA Route 28 and to complete missing links in the system. Planned roadway connections and improvements of particular significance in the Sterling Community include:

- The **VA Route 7 (Harry Byrd Highway)** traffic flow project (as described in detail above in the discussion of the Potomac Community).
- **VA Route 28 (Sully Road)** is currently a six-lane divided facility, connecting VA Route 7 near Dulles Town Center with the Dulles Toll Road (VA Route 267) at the Fairfax County line. The road is planned to be widened to eight lanes from VA Route 7 south to Old Ox Road (VA Route 606), and to ten lanes from Old Ox Road (VA Route 606) south to the Fairfax County line, which is consistent with planned improvements in Fairfax County. The roadway has largely been converted to a limited access facility, with grade-separated interchanges constructed at a number of locations. The most recent phase of interchange construction, which began in 2002, took place under the Virginia Public-Private Transportation Act (PPTA) of 1995, and has completed interchanges at Old Ox Road (VA Route 606), Sterling Boulevard (VA Route 846), Waxpool/Church Roads (VA Route 625), Nokes Boulevard (VA Route 1793), and a partial interchange at Innovation Avenue (VA Route 209). Completion of a full interchange at Innovation Avenue (VA Route 209) is anticipated in conjunction with future adjacent development. Eventually, all at-grade access will be terminated along VA Route 28, though VDOT may permit certain at-grade access points to remain open until such time as the parallel road network (discussed below) is in place. The Route 28 interchanges were partially financed through a real estate tax surcharge on commercial properties within a special Route 28 corridor tax district (the “Route 28 Highway Transportation Improvement District”, commonly referred to as the Route 28 Tax District) that has been in place since the late 1980s. Funds from the Route 28 Tax District were also used to finance the initial widening of VA Route 28 and the construction of the VA Route 28 interchanges at VA Route 7 and at the Dulles Toll Road (VA Route 267) in the early 1990s. Future widening to eight lanes from Sterling Boulevard (VA Route 846) south to the Fairfax County line is also anticipated to be funded through the tax district and a PPTA process. HOV operations will be considered for the new lanes.
- The **Route 28 Parallel Roads (Atlantic Boulevard (VA Route 1902)/Davis Drive (VA Route 868) & Pacific Boulevard (VA Route 1036))** will provide long-term access to developments along the VA Route 28 corridor once VA Route 28 becomes a complete limited access facility. Each parallel road is planned to ultimately be a four-lane roadway. **Atlantic Boulevard (VA Route 1902)** is complete from VA Route 7 south to VA Route 625 (Church Road), including a bridge over the W & OD Trail. **Davis**



Drive (VA Route 868) has been completed from Church Road (VA Route 625) south to Yeager Court (south of Sterling Boulevard (VA Route 846)), but a gap remains from this point south to Old Ox Road (VA Route 606). The portion of Davis Drive (VA Route 868) south to Old Ox Road (VA Route 606) has been proffered by adjacent development, but the development that would trigger this construction has not occurred. Further extension of Davis Drive (VA Route 868) is planned from Old Ox Road (VA Route 606) south to a future bridge over the Dulles Toll Road (VA Route 267) at the Fairfax County line. Regarding **Pacific Boulevard (VA Route 1036)**, the segment from Nokes Boulevard/Gloucester Parkway (VA Route 2150) north and west across the Broad Run to Russell Branch Parkway (VA Route 1061) (in the Ashburn Community) is unbuilt, but is anticipated to be constructed as part of the approved Kincora development. Currently, a two-lane (half-section) of Pacific Boulevard (VA Route 1036) was constructed to the south of Gloucester Parkway (VA Route 2150) as part of the VA Route 28/Nokes Boulevard (VA Route 1793) interchange project; the Kincora development is anticipated to complete the remaining two-lanes of this segment in conjunction with its adjacent development. VDOT recently completed construction of a four-lane segment from Severn Way (VA Route 1748) south to Auto World Circle (including a bridge over the W & OD Trail). An additional gap in Pacific Boulevard (VA Route 1036) remains between Dresden Street (south of Waxpool Road (VA Route 625)) and Relocation Drive (VA Route 775); construction of this segment is anticipated in conjunction with future adjacent developments and a variety of public funding sources. Further extension of Pacific Boulevard (VA Route 1036) south of Old Ox Road (VA Route 606) through Dulles Airport property to connect with the Route 28/Innovation Avenue (VA Route 209) interchange is planned.

- **Moran Road (VA Route 634/VA Route 634 Extended)** is planned to be widened to a continuous four-lane section for its entire length and continue east across VA Route 28 on a new overpass to connect with Shaw Road (VA Route 636) at Belfort Park Drive in the Belfort Park Area. This planned bridge crossing will facilitate access from the Belfort Park area to Pacific Boulevard (VA Route 1036) and other areas on the west side of VA Route 28, including the planned Route 606 Metrorail station.
- The **Belfort Park Area**, bounded by Church Road (VA Route 625), Sterling Boulevard (VA Route 846), VA Route 28, and the W & OD Trail, has experienced significant changes in access to existing development due to the closing of multiple ingress/egress points with the opening of Sterling Boulevard (VA Route 846) and Waxpool/Church Road (VA Route 625) interchanges along VA Route 28. Planned road connections to improve access to the area include (1) construction of a four-lane **Moran Road Extension (VA Route 634 Extended)** from Shaw Road (VA Route 636) east to Davis Drive (VA Route 868); and (2) the extension of **Glenn Drive (VA Route 864)** north as a four-lane roadway to connect with the new Moran Road Extension (VA Route 634 Extended), aligning with the existing north-south segment of Cedar Green Road.
- **Sterling Boulevard (VA Route 846)** is planned to be widened from its current four lanes to six lanes from Davis Drive (VA Route 868) west to VA Route 28. Sterling Boulevard (VA Route 846) is planned to be extended from its current terminus at Pacific Boulevard (VA Route 1036) west to Shellhorn Road (VA Route 643) at Randolph Drive (VA Route 1072) providing an additional east/west road connection in this area.
- **Church Road (VA Route 625)** is planned to be widened from its current four lanes to six lanes between VA Route 28 and Atlantic Boulevard (VA Route 1902)/Davis Drive (VA Route 868).
- **Waxpool Road (VA Route 625)** is a six-lane divided facility from the VA Route 28 interchange west across Broad Run to the intersection of Loudoun County Parkway (VA Route 607) (in the Ashburn Community). This segment of roadway experiences significant peak hour congestion and high frequency of accidents, particularly westbound during the afternoon peak period. VDOT recently conducted a corridor study to more effectively move traffic through this area, including potential changes to signage along the corridor and feeder sections of VA Route 28, physical changes to intersections at Pacific Boulevard (VA Route 1036), Broderick Drive, and Loudoun County Parkway (VA Route 607), and alteration of signal timing. As of this writing, improvements to the Waxpool Road (VA Route 625)/Loudoun County Parkway (VA Route 607) intersection are being implemented by VDOT.



- **Gloucester Parkway (VA Route 2150)** between VA Route 28 at Nokes Boulevard (VA Route 1793) and Loudoun County Parkway (VA Route 607)) is another critical roadway link across Broad Run to the Ashburn Community. This segment of roadway, planned to be a six-lane divided facility, is anticipated to be constructed in conjunction with future development in the area.
- **Old Ox Road (VA Route 606)** in the Sterling Community connects the Dulles Greenway (VA Route 267) and VA Route 28 and continues east to the Fairfax County/Town of Herndon line at Rock Hill Road (VA Route 605). The entirety of Old Ox Road (VA Route 606) within the Sterling Community is currently a four-lane divided roadway. West of VA Route 28, Old Ox Road (VA Route 606) is planned to be widened to six lanes and will form part of a planned limited access loop around the perimeter of Dulles Airport; opportunities for parallel or frontage roads and access consolidation will be considered along this section of Old Ox Road (VA Route 606) in order to facilitate local access when the roadway is converted to a limited access facility. HOV operations will also be considered for the final two lanes of this roadway when the six-lane facility is constructed. East of VA Route 28, Old Ox Road (VA Route 606) is planned to be widened to six lanes. Coordination with the Town of Herndon will be necessary regarding this widening as it approaches the Rock Hill Road (VA Route 605) intersection at the Town/County line.
- **Prentice Drive (VA Route 1071/VA Route 1071 Extended/Route 789 Extended)** will provide an additional east-west connection across Broad Run. The roadway is planned as a four-lane divided section from Pacific Boulevard (VA Route 1036) to the Shellhorn Road (Route VA Route 643) corridor at Metro Center Drive (in the Ashburn Community). This roadway will provide access between the future Route 606 and Route 772 Metrorail stations.
- **Rock Hill Road (VA Route 605)** is planned as two lanes from Old Ox Road (VA Route 606) south to the Fairfax County line. Rock Hill Road (VA Route 605) is planned to be extended west to intersect with future Davis Drive (VA Route 868).
- **Shaw Road (VA Route 636)** is planned to be widened to a continuous four-lane section from Sterling Boulevard (VA Route 846) south to Old Ox Road (VA Route 606), and be constructed as a new four-lane roadway from Old Ox Road (VA Route 606) south to Innovation Avenue (VA Route 209).
- **Relocation Drive (VA Route 775)** is planned to be widened from two lanes to four lanes from Old Ox Road (VA Route 606) northwest to Pacific Boulevard (VA Route 1036).
- **Shellhorn Road (VA Route 643)** will provide an east-west connection across Broad Run and access to the Route 606 and Route 772 Metrorail Stations. The roadway is planned as a four-lane divided section from Prentice Drive (VA Route 1071) at Metro Center Drive (in the Ashburn Community) to Sterling Boulevard (VA Route 846) at Moran Road (VA Route 634) corridor. This roadway will provide access between the future Route 606 and Route 772 Metrorail stations.

Suburban Area Road Policies

1. It is a priority of this plan that safety concerns, gaps in the existing road system, and connections to collector and arterial roads be addressed to serve neighborhoods and employment centers already in place.
2. To the extent allowed by funding source requirements, the County will direct transportation funding to the Suburban Policy Area where planned land uses and population densities warrant the expansion of roadway capacity and the implementation and expansion of transit services.
3. The County supports the creation of limited access freeways, including VA Route 7 and US Route 50 in the Suburban Policy Area for east-west connectivity, and VA Routes 28 and 606 for north-south connectivity.



4. Suitable alternative access to existing uses, including parallel roads where planned, shall be constructed concurrently with, or prior to, and shall be a condition to, establishment of limited access freeways.
5. VA Route 7, east of VA Route 28, is a gateway to Loudoun County. Strategies for future improvements to this segment of roadway will be explored during the Community Plan process and will support the revitalization land use strategies envisioned for this area.
6. Traffic calming measures shall be considered for local and collector roadways in the Suburban Policy Area.
7. The County supports the planning and development of the Loudoun County Parkway and VA Route 606 corridors, to the extent possible, including connections to the Dulles Corridor Metrorail Project.
8. The County will require conformance with appropriate design standards on road segments within the County's designated Transit Nodes and Urban Center to ensure pedestrian and bicycle mobility. Roadway design characteristics within these areas will complement the streetscape design goals outlined in the *Revised General Plan*.
9. The County will continue to refine the Suburban Policy Area transportation road network through the Community Plan process, with input from local residents and other stakeholders. Through these plans, the County will continue to seek opportunities to improve local street connectivity. In addition, these plans should include traffic analysis modeling and scenario planning to test alternative design and development visions and to affirm that traffic systems provide for efficient movement and travel choices throughout the planning process.
10. Within the Suburban Policy Area, the County supports VDOT's Secondary Street Acceptance Requirements (SSAR) that require that new streets must satisfy specific public benefit criteria to be accepted into the state system, including the connectivity of road networks (in accordance with the connectivity index criteria as defined in the SSAR), appropriate pedestrian accommodations and public service criteria. The net effect of these requirements will be to develop a grid of local streets with integrated bicycle and pedestrian access.
11. As secondary road corridors such as VA Route 606, VA Route 659 and VA Route 659 Relocated (Northstar Boulevard) are improved, they should be considered for reclassification as primary routes, in light of the heavy traffic loads and critical regional access they are projected to provide. The County will work cooperatively with VDOT to implement these classification changes.
12. The County will continue to seek opportunities to improve the planned and existing road network including bicycle and pedestrian facilities in the Suburban Policy Area by encouraging additional connections between neighborhoods and between residential and employment areas where such connections can be made with minimal disruptions and where it can be demonstrated that such connections will ultimately reduce congestion.
13. The County supports the implementation of the "Dulles Loop," the concept of a system of limited and/or controlled access roads that surround the perimeter of the Dulles Airport including VA Route 28, US Route 50 and VA Route 606 in order to facilitate access to and around the airport.
14. The County supports the study of the feasibility of alternative uses (HOV lanes, bus lanes, etc) for additional lanes along VA Route 7 between Leesburg and VA Route 28, VA Route 28 from VA Route 7 to the Fairfax County line and along VA Route 606 from US Route 50 to VA Route 28 when these facilities are considered for expansion to their ultimate conditions.
15. The County supports the study of a new connection from VA Route 606 south to the Route 28/CIT Metrorail Station in coordination with Fairfax County.



16. The County will work with adjoining jurisdictions to create seamless road connections across borders wherever possible.
17. Within the Suburban Policy Area, the County should explore the concept of additional connections to Maryland across the Potomac River in consultation with Maryland in order to ease existing and forecasted congestion on US Route 15.

2. Rural Policy Area Roads

The Rural Policy Area includes all of the western part of the County outside of the Towns and associated Joint Land Management Areas (JLMAs). The southern, western and northern boundaries are the County's shared borders with Prince William, Fauquier and Clarke counties, and with West Virginia and Maryland's Potomac River boundaries. The policy area's eastern boundary, immediately adjacent to the Transition Policy Area, is defined by a combination of Leesburg's town boundary, VA Route 267 (the Dulles Greenway), VA Route 621 (Evergreen Mills Road), and the Broad Run watershed boundary. CTP roads within the Rural Policy Area include **VA Route 7 (Harry Byrd Highway)**, **VA Route 7 Business (Colonial Highway/Main Street/Loudoun Street)**, **VA Route 9 (Charles Town Pike)**, **US Route 15 (James Monroe Highway)**, **US Route 50 (John Mosby Highway)**, the **US Route 15/50 Connector (Howzers Branch Drive)**, **VA Route 287 (Berlin Turnpike)**, **US Route 340 (Jefferson Pike)**, **VA Route 611 (St. Louis Road)**, **VA Route 623 (Willisville Road)**, **VA Route 653 Relocated (Crosstrail Boulevard)**, **VA Route 662 (Clarkes Gap Road)**, **VA Route 663/668 (Taylorstown Road)**, **VA Route 665 (High Street/Loyalty Road)**, **VA Route 671 (Harpers Ferry Road)**, **VA Route 672 (Lovettsville Road)**, **VA Route 673 (Irish Corner Road)**, **VA Route 673/681 (Milltown Road)**, **VA Route 690 (Silcott Springs Road/Hillsboro Road/Mountain Road)**, **VA Route 704 (Hamilton Station Road/Harmony Church Road)**, **VA Route 705 (Braddock Road)**, **VA Route 719 (Stony Point Road/Woodgrove Road/Airmont Road/Green Garden Road)**, **VA Route 734 (Snickersville Turnpike)**, **VA Route 743 (Millville Road)** and **VA Route 1320 (Evening Star Drive)**.

Unlike the Suburban Policy Area road network, the Rural Policy Area network is largely built to its ultimate condition. Most roads within this policy area are two-lane shared-use facilities intended to serve rural economic enterprises, the low density residential area, and the incorporated towns. A system of scenic roadways has been designated as part of the state tourism program. While long-term forecasting and analysis has shown that some CTP roads within the Rural Policy Area will experience significant congestion by 2030, the County has made the preservation of rural roads a top priority, and by doing so, has demonstrated its support of tourism and the rural economy. For example, to protect and preserve the historic character of the historic roads in the southwestern part of the county, the County designated a network of 32 historic roads, which is known as the "Beaverdam Creek Historic Roadways District", as a Historic Roadways District as provided for in the Zoning Ordinance. The Beaverdam Historic Roadways District is located south of VA Route 734 (Snickersville Turnpike) and north of US Route 50 (John Mosby Highway) and is bounded to the east by St. Louis Road (VA Route 611) and to the west by the Blue Ridge Mountains and the Clarke County line.

In limited circumstances in major corridors, the County has approved capacity improvements or the study thereof. Significant roadways within the Rural Policy Area are described as follows:

- **US Route 15 (James Monroe Highway)**, runs north-south from the County's southern border with Prince William County to its northern border at the Maryland state line. US Route 15 traverses an environmentally sensitive karst area and is a state-designated Virginia Byway, along which are located notable historic landmarks. North of Leesburg, the facility bisects the Catoctin Rural Historic District, which is listed in the Virginia Landmark Register. The facility is also part of the "Journey Through Hallowed Ground" corridor, a historically and culturally significant corridor that extends outside of Loudoun County, and follows US Route 15 and VA Routes 20, 231, 22 and 53 from Gettysburg, Pennsylvania, to Charlottesville, Virginia. Analysis has shown that congestion will be a serious concern on this roadway by 2030, and would require additional capacity. Given the context of this facility, however, outside of the Town of Leesburg, US Route 15 should remain a two-lane road with 12-foot travel lanes and safety improvements to be built as needed and funded, except for the segments between



VA Route 704 (Harmony Church Road) and the southern Leesburg Town Limits and US Route 15 Business (North King Street) north to VA Route 661 (Montresor Road), where US Route 15 is planned to be widened to four lanes.

- **US Route 50 (John Mosby Highway)** runs east-west between Fairfax and Fauquier Counties. The portion within the Rural Policy Area begins at the Transition Policy Area boundary, just east of US Route 15, extending west to the Fauquier County line. State Virginia Byway designation and Loudoun County Historic Roadway District or Historic Access Corridor designation will be sought for the portion running through the Mosby Heritage Area in recognition of the road's scenic and historic character. In the Rural Policy Area, there is a Traffic Calming Demonstration project funded by the US Department of Transportation (USDOT) from Lenah (in Loudoun County) to Paris (in Fauquier County). This traffic calming project maintains US Route 50 as a two-lane highway. The project includes a total of four roundabouts in the vicinity of Gilbert's Corner which have been completed: the main roundabout at US Route 50 and US Route 15, an auxiliary roundabout south of US Route 50 on US Route 15 at the US Route 15/50 Connector (Howsers Branch Drive), and two auxiliary roundabouts east of US Route 15 on US Route 50 at Howsers Branch Drive and at VA Route 860 (Watson Road). The main roundabout may be expanded to accommodate two lanes of through traffic in the future.
- **VA Route 7 (Harry Byrd Highway)** is a principal arterial highway running east-west through Loudoun County. In the Rural Policy Area, it extends from the western boundary of the Town of Leesburg to the Clarke County line. VA Route 7 (Harry Byrd Highway) is currently planned to be an eight-lane principal arterial highway between VA Route 7 Business (West Market Street) (in Leesburg) and VA Route 9 (Charles Town Pike), a six-lane principal arterial between VA Route 9 and Round Hill, and a four-lane principal arterial highway from Round Hill to the Clarke County line.
- **VA Route 9 (Charles Town Pike)** runs from VA Route 7 (Harry Byrd Highway) near Paeonian Springs northwest to the boundary with West Virginia. VA Route 9 (Charles Town Pike) is another facility projected to experience significant congestion by 2030; however, given the sensitivity of the rural character of this corridor, any options to add additional capacity must be thoroughly studied and vetted through the community. Improvements that have been approved include traffic calming measures to be implemented in and near the Town of Hillsboro.
- **VA Route 287 (Berlin Turnpike)** extends from the Potomac River near Brunswick, Maryland south to VA Route 7 Business (East Main Street) in the Town of Purcellville. Within the Rural Policy Area, it is planned to remain as a two-lane major collector highway. The Town Council of Purcellville has requested funds from the Commonwealth Transportation Board for improvements to the intersection at VA Route 7 (Harry Byrd Highway) and VA Route 287 (Berlin Turnpike), as well as for extending VA Route 287 (Berlin Turnpike) on the south side of VA Route 7 Business (East Main Street) to VA Route 690 (Silcott Springs Road) as the Purcellville South Collector Road. Safety improvements will also be implemented on VA Route 287 (Berlin Turnpike). According to traffic projections, VA Route 287 (Berlin Turnpike) between Maryland and VA Route 9 (Charles Town Pike) could become significantly congested to require additional capacity by 2030.
- **All Secondary Roads (numbered 600 and above)** in the Rural Policy Area will be kept in their present state with essential improvements to be undertaken only where required for the safety of all users. Road improvements commensurate with impacts, but consistent with the Rural Road policies, are expected to be provided by residential and non-residential developments along rural roads.

a. Unpaved Roads

Loudoun County has a network of over 300 miles of unpaved rural roads that reflect the County's agricultural heritage. The unpaved rural road network has a natural traffic calming effect that permits their shared use for horseback riding and hiking and contributes to the quality of life sought by rural households. They are recognized as adding to the rural character that attracts tourists. They also facilitate the safe, efficient movement of farm vehicles. The County is committed to the preservation of a safe unpaved rural road network.



In any case, paving most of the unpaved roads is cost prohibitive given the level of funding devoted to the Secondary Road Improvement Program (SRIP) and the higher priority the County assigns to roads in the Suburban and Transition Policy Areas. If the County chose to pave every road in Loudoun it would take more than a century to do so at current funding levels.

The County recognizes that the higher the traffic volumes on unpaved roads, the higher the maintenance costs incurred by VDOT; however, the cost of maintaining all of the unpaved roads in Loudoun County per year is less than the cost of paving one mile of unpaved road. Reductions of permitted rural densities as envisioned in the *Revised General Plan* have been implemented in part to mitigate the additional costs that higher traffic volumes incur and to maintain adequate levels of service and safety on the unpaved roads. The rural paved road network often serves the collector road function for the unpaved roads.

Under certain circumstances, unpaved roads must be paved. This situation occurs when VDOT can no longer provide adequate maintenance to keep the facility in operable condition. In such situations, the County supports the use of “Pave-In-Place” and “Rustic Road” standards. Both of these programs employ context-sensitive design techniques. The VDOT Rustic Road and Pave-In-Place programs are described in the sections that follow.

b. Rustic Road Program

VDOT manages a Rural Rustic Road program for any unpaved secondary road that carries at least fifty but no more than 1,500 vehicles per day. The engineering standards in this program are designed to preserve the significant historic and environmental features of these low volume roadways, while limiting impacts to the rights-of-way of the existing roads. The following VDOT guidelines apply to the Rural Rustic Road Program:

- Roadways must be unpaved and already within the State Secondary System.
- Roadways must be a priority (line item) in an approved Secondary Six-Year Plan, even if the funding source is not from normal, secondary construction allocations.
- The Board of Supervisors, in consultation with VDOT’s Resident Engineer or designee, must designate by a specific resolution a road or road segment as a Rural Rustic Road.
- Roadway or roadway section must be predominately for local traffic use.
- The local nature of the road means that most motorists using the road have traveled it before and are familiar with its features.
- The Board of Supervisors will endeavor to limit growth on roads improved under the Rural Rustic Road program and cooperate with VDOT through its comprehensive planning process to develop lands consistent with rural rustic road concepts.

c. Pave-In-Place Program

VDOT manages a “Pave-In-Place” program for any unpaved secondary road that carries at least fifty but no more than 750 vehicles per day. These roads may be paved or improved and paved within their existing rights-of-way or within a wider right-of-way that is less than forty feet wide if the following conditions are met:

- The governing body of the County has requested paving of such road as part of the Secondary Six-Year Plan for the County.
- The Commonwealth Transportation Commissioner, after having considered only (i) the safety of such road in its current condition and in its paved or improved condition, including the desirability of reduced speed limits and installation of other warning signs or devices, (ii) the views of the residents and owners of property adjacent to or served by such road, (iii) the views of the governing body making the request, (iv) the historical and aesthetic significance of such road and its surroundings, (v) the availability of any additional land that has been or may be acquired by gift or other means for the purpose of paving such



road within its existing right-of-way or within a wider right-of-way that is less than forty feet wide, and (vi) environmental considerations, shall grant or deny the request for the paving of such roads under this subsection.

Rural Roads Policies

1. Transportation road improvements in the Rural Policy Area will be focused on the safety of all users and will be designed to protect the rural character of the road network.
2. All the roads in the Rural Policy Area will be kept as two-lane roads except portions of VA Route 7 (Harry Byrd Highway), VA Route 9 (Charles Town Pike), US Route 15 (James Monroe Highway), and VA Route 621 (Evergreen Mills Road).
3. VA Route 7 (Harry Byrd Highway) will be developed as a fully limited access highway with a minimum of six lanes from Round Hill to Leesburg. The portion between VA Route 9 (Charles Town Pike) and VA Route 7 Business (West Market Street) in Leesburg, planned for eight lanes, is considered a high priority project, subject to completion of parallel road improvements, where planned, on the north side of VA Route 7 (Harry Byrd Highway).
4. VA Route 9 (Charles Town Pike) will remain a two-lane facility with necessary improvements including turn lanes, 12-foot travel lanes and roundabouts as appropriate.
5. US Route 15 (James Monroe Highway) will remain a two-lane facility with necessary improvements including turn lanes, 12-foot travel lanes and roundabouts as appropriate, except for the segments between the southern Leesburg Town Limits and VA Route 704 (Harmony Church Road) and US Route 15 Business (North King Street) north to VA Route 661 (Montresor Road) where it will be widened to a four-lane, median-divided road.
6. The County fully supports the US Route 50 (John Mosby Highway) traffic calming project that was federally funded in the 1998 TEA-21 bill as a national model in rural traffic calming. A goal of the project is to serve as a model for similar projects in other areas of the County as a means of providing safer communities at cost savings. Traffic calming is in keeping with the goal of preserving the scenic and historic value of the Rural Policy Area.
7. The County will protect the historic and scenic qualities of roads within the Rural Policy Area through the designations of Historic Roadway Districts and/or Historic Access Corridors as provided for in the Revised 1993 Zoning Ordinance and the Heritage Preservation Plan.
8. VA Route 287 (Berlin Turnpike) will be maintained as a two-lane rural arterial highway to be coordinated with the Town Plans of Purcellville and Lovettsville.
9. In order to protect the character of rural roads, turn lanes will only be constructed when required for safety.
10. The County will seek to make only essential safety improvements on unpaved rural roads based on volumes, the nature of the road users (local vs. unfamiliar drivers), and accident data.
11. The County will continue to coordinate with VDOT on procedures that enable County review of VDOT road improvement plans for rural roads so that the County can assess and prevent potential negative impacts of VDOT road projects on such rural character features as tree canopy, stone walls and fences, hedgerows, historic and agricultural structures, viewsheds and karst/sensitive environmental features within the portions of the Rural Policy Area underlain by limestone.
12. The County will refer to the Beaverdam Creek Historic Roadways District when evaluating road improvement projects within its boundaries.
13. Any necessary improvements to roads in or adjacent to existing villages will incorporate site specific design solutions so as to preserve the character and fabric of the villages.
14. Development projects along rural roads will be required to make road improvements based on their impacts as appropriate and as consistent with these rural roads policies.



15. In cases where unpaved roads must be paved, pave-in-place and rustic road standards will be used to the maximum extent possible.
16. The County will work with VDOT toward extensions and refinements to pave-in-place and rural rustic road legislation including its application to improvements of hard surfaced roads.
17. The County will work with VDOT, and seek state enabling legislation if necessary, to provide rural road standards for safe travel by all road users such as farm vehicles, horses, bicycles and pedestrians. The needs of rural tourism will be a major consideration.
18. The County will work with adjoining jurisdictions to create seamless road connections across borders wherever possible.

3. Transition Policy Area Roads

As defined in Chapter 8 of the *Revised General Plan*, the Transition Policy Area is a distinct planning area envisioned to serve as a visual and spatial transition between the Suburban Policy Area to the east and the Rural Policy Area to the west. The Transition Policy Area forms an “L-shaped” area stretching from just south of Leesburg to the Prince William County line, between Evergreen Mills Road (VA Route 621) and the western boundary of the Broad Run watershed on the west and Goose Creek, Beaverdam Reservoir, and the planned alignment of Northstar Boulevard (VA Route 659 Relocated) on the east. South of Braddock Road (VA Route 620), the area extends east to the Fairfax County line. The Transition Policy Area is divided into six sub-areas ranging in density from one dwelling unit per 10 acres to two dwelling units per acre in a village pattern.

Major roadways within the Transition Policy Area include segments of the **Dulles Greenway (VA Route 267)**, **Sycolin Road (VA Route 625)**, **Cochran Mill Road (VA Route 653)**, **Evergreen Mills Road (VA Route 621)**, **Ryan Road (VA Route 772)**, **John Mosby Highway (US Route 50)** and its parallel roads (**Glascok Boulevard** and **Tall Cedars Parkway (VA Route 2200)**), **Braddock Road (VA Route 620)**, **Northstar Boulevard (VA Route 659 Relocated)**, **Gum Spring Road (VA Route 606 Extended/Existing VA Route 659)** and **Loudoun County Parkway (VA Route 606)** and all of **Foley Branch Boulevard (formerly Dulles South Boulevard)**, and the **Lenah Loop Road**.

There are two types of regional roads in the Transition Policy Area, distinguished by their function and the areas which they connect. The first are roads that connect major activity centers outside of the Transition Policy Area. Examples include **Evergreen Mills Road (VA Route 621)**, which connects US Route 50 and Fairfax County with Leesburg; **John Mosby Highway (US Route 50)**, which connects Fairfax County and the Washington, DC Regional Core with Middleburg and Winchester; and the **Dulles Greenway (VA Route 267)**, which connects the Dulles Corridor with Leesburg and points to the north and west. Traffic from developments within the Transition Policy Area will only amount to a small portion of the total traffic on these roads. The second type of road includes those which are completely contained within the Transition Policy Area and which will primarily serve traffic generated by developments within the area. Examples include the **Lenah Loop Road** and **Foley Branch Boulevard**.

Much of the planned CTP road network within the Transition Policy Area has not yet been constructed, and existing facilities are straining to handle current traffic at acceptable levels of service (LOS). Construction of the remaining segments of the planned road network within the Transition Policy Area – both new corridors as well as expansion of existing roadways to their planned conditions – is anticipated to be completed in conjunction with approved and future land development applications. Specific discussion of CTP roads within the Transition Policy Area is provided below:

- **US Route 50 (John Mosby Highway)** within the Transition Policy Area is currently a four-lane divided facility from the Suburban Policy Area (Dulles Community) boundary (at the planned alignment of Northstar Boulevard (VA Route 659 Relocated)) west to a point between existing Goshen Road/Fleetwood Road (VA Route 616) and Lenah Road (VA Route 600)/Lenah Farm Lane, and a two-lane rural section from that point west into the Rural Policy Area. US Route 50 is planned to be widened to four lanes from the point where the existing four-lane section ends (west of the Goshen



Road/Fleetwood Road intersection) and the Lenah Road/Lenah Farm Lane intersection (which is also the alignment of the planned Lenah Loop Road). Funding for this widening has not been identified. West of Lenah Road (VA Route 600), US Route 50 is planned to remain as a two-lane rural section, consistent with the US Route 50 Traffic Calming Project just to the west within the Rural Policy Area.

- **The US Route 50 Parallel Roads (Glascok Boulevard & Tall Cedars Parkway (VA Route 2200))** are each planned to extend west from the Suburban Policy Area (Dulles Community) as two-lane undivided rural sections as far west as the Lenah Loop Road. Forecasts have determined that the segment of Glascok Boulevard (the Route 50 North Collector Road) west of the Lenah Loop Road is no longer necessary, and therefore this segment has been removed from the CTP.
- **Braddock Road (VA Route 620)** forms much of the boundary between the Suburban Policy Area (Dulles Community) and the Transition Policy Area. Currently, Braddock Road (VA Route 620) is built as a two-lane section from the Fairfax County line west to the vicinity of Northstar Boulevard (VA Route 659 Relocated). West of Northstar Boulevard (VA Route 659 Relocated), Braddock Road (VA Route 620) is planned to remain as a two-lane facility but be improved to a continuous paved section.
- **Northstar Boulevard (VA Route 659 Relocated)**, a new north-south corridor extending south from the Suburban Policy Area (Dulles Community), enters the Transition Policy Area at US Route 50. It is planned to continue south into Prince William County where it would connect with a planned extension of the VA Route 234 Bypass. Northstar Boulevard is ultimately planned to be a six-lane divided facility. The southernmost segment of Northstar Boulevard within Loudoun County is planned to generally follow the alignment of existing Lightridge Farm Road (VA Route 705). Construction of Northstar Boulevard is anticipated in conjunction with future development along the corridor.
- **Existing Gum Spring Road (Existing VA Route 659 / VA Route 606 Extended / West Spine Road)** follows the alignment of Existing VA Route 659 (Gum Spring Road) south from the Suburban Policy Area at Braddock Road into Prince William County, where it connects to VA Route 234 north of Manassas National Battlefield Park. An approximately one-mile segment of the existing two-lane roadway in Loudoun County has been approved for realignment and reconstruction to the west of its present location in order to accommodate an approved expansion of the Luck Stone Bull Run Quarry. The entirety of this roadway within the Transition Policy Area is ultimately planned to be a four-lane divided facility.
- **Loudoun County Parkway (VA Route 606)** is planned to extend south from the Suburban Policy Area at Braddock Road (VA Route 620), continuing through the Transition Policy Area and through western Fairfax County to Prince William County and the City of Manassas. Within the Transition Policy Area, Loudoun County Parkway (VA Route 606) is planned to ultimately be a six-lane divided roadway. No funding for construction of this roadway within Loudoun County has been identified.
- **The Lenah Loop Road** is a planned roadway that would connect Evergreen Mills Road (VA Route 621) (near the existing Evergreen Mills Road/Fleetwood Road (VA Route 616) intersection) in the north to Northstar Boulevard (VA Route 659 Relocated) in the south, intersecting Glascok Boulevard, US Route 50, Tall Cedars Parkway (VA Route 2200), and Braddock Road (VA Route 620) along the way. The segment of the Lenah Loop Road between the Glascok Boulevard and Tall Cedars Parkway (VA Route 2200) is planned to be a four-lane undivided facility and would generally follow the existing alignments of Lenah Farm Lane, Lenah Road, and Elliot Lane; the remaining segments of the Lenah Loop Road, to the north and south of the planned four-lane segment, are planned to be a two-lane rural section on a new alignment; construction is anticipated to be in conjunction with future developments along the corridor. The Lenah Loop Road was referred to as the “Lenah Connector Road” in the 2001 CTP and was planned to extend southward (south of Braddock Road (VA Route 620)) into Prince William County (rather than turn east to connect with Northstar Boulevard (VA Route 659 Relocated), as is currently proposed). The alignment has been changed as Prince William County does not have a planned road facility capable of receiving the Lenah Connector Road. The name change to “Lenah Loop Road” better reflects the roadway’s new planned alignment and function.



- **Foley Branch Boulevard (formerly Dulles South Boulevard)** is a planned east-west roadway, to the south of Braddock Road (VA Route 620), which would connect Loudoun County Parkway (VA Route 606) with Gum Spring Road (Existing VA Route 659/VA Route 606 Extended/West Spine Road) and Northstar Boulevard (VA Route 659 Relocated). The roadway is ultimately planned to be a four-lane divided rural section. Responsibility for construction of this roadway has not been identified.
- **Evergreen Mills Road (VA Route 621)** traverses the Transition Policy Area, connecting Leesburg with the US Route 50 Corridor (via Loudoun County Parkway (VA Route 606)) along the southwestern side of Dulles Airport) in the South Riding area. Within the Transition Policy Area, from Hogeland Mill Road (VA Route 649) at Sycolin Creek south to the planned split of Shreveport Drive (VA Route 621 Relocated) near the southwest corner of the Brambleton development, Evergreen Mills Road (VA Route 621) is currently a two-lane rural section, and is planned to be widened to a four-lane divided rural section. Funding for this widening has not been identified.
- **Ryan Road (VA Route 772)** is an existing east-west roadway through part of the Transition Policy Area, connecting Northstar Boulevard (VA Route 659 Relocated) in the Brambleton development with Evergreen Mills Road (VA Route 621). The roadway is currently a two-lane rural section, and is planned to be widened to a four-lane undivided section.
- The **Dulles Greenway (VA Route 267)**, a six-lane private toll road which connects the Dulles Corridor with Leesburg and points to north and west, traverses a short stretch of Transition Policy Area between Goose Creek and Sycolin Creek. The CTP identifies a future interchange location within the Transition Policy Area at Sycolin Road (VA Route 625), between the existing interchanges at Belmont Ridge Road (VA Route 659) (Exit 4) and Shreve Mill Road/Crosstrail Boulevard (Exit 3) (VA Route 653/VA Route 653 Relocated). The Dulles Greenway (VA Route 267) is ultimately planned to be widened to eight lanes, however, the Greenway owners have no current plans to construct the proposed interchange at Sycolin Road (VA Route 625).
- **Sycolin Road (VA Route 625)** is a two-lane roadway which connects Leesburg with Belmont Ridge Road (VA Route 659) at Ashburn Farm Parkway (VA Route 625) in the Suburban Policy Area (Ashburn Community). Sycolin Road (VA Route 625) is ultimately planned to be widened to a four-lane divided section for its entire length, though funding for this widening has not been identified. A future interchange with the Dulles Greenway (VA Route 267) is depicted on the CTP, though the owners of the Greenway have no current plans to construct this facility.
- **Cochran Mill Road (VA Route 653)** is largely an unpaved roadway which connects Sycolin Road (VA Route 625) south of Leesburg with Russell Branch Parkway east of Leesburg. The CTP calls for realignment of the southernmost segment of Cochran Mill Road (VA Route 653) in order to remove the roadway from the Sycolin Creek floodplain. This realignment would move this southernmost segment of the roadway, from Sycolin Creek to Sycolin Road (VA Route 625), into the Transition Policy Area. The entirety of Cochran Mill Road (VA Route 653) is planned to be widened to a four-lane undivided section. No funding for this construction has been identified.

Transition Area Road Policies

1. Major collector and arterial roads that serve significant traffic outside of the Transition Policy Area will be planned for the necessary capacities and roadway sections to accommodate through trips.
2. Appropriate techniques will be used to visually signal travelers that they have left the Suburban Policy Area and entered the Transition Policy Area such as:
 - a. A reduction in the number of through travel lanes;
 - b. A change from a median-divided to an undivided section;
 - c. A change in speed limit;



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- d. Natural landscaping, including wider buffers;
 - e. The use of shoulder and ditch sections instead of curb and gutter sections;
 - f. Context-sensitive traffic calming features and techniques; and
 - g. Increased building setbacks.
3. Within the Transition Policy Area, the County supports VDOT's Secondary Street Acceptance Requirements (SSAR) that require that new streets must satisfy specific public benefit criteria to be accepted into the state system, including the connectivity of road networks (in accordance with the connectivity index criteria as defined in the SSAR), appropriate pedestrian accommodations and public service criteria. The net effect of these requirements will be to develop a grid of local streets with integrated bicycle and pedestrian access.
 4. The County will work with adjoining jurisdictions to create seamless road connections across borders wherever possible.

Town Joint Land Management Area (JLMA) Roads

Each of Loudoun County's seven incorporated towns controls their own transportation planning functions within their corporate limits. Additionally, both Leesburg and Purcellville are responsible for the maintenance and operation of all public roads within their boundaries. However, the County works cooperatively with each Town regarding transportation matters both within the Towns and in unincorporated areas outside the Towns' boundaries. As outlined in detail in Chapter 9 of the *Revised General Plan*, Joint Land Management Areas (JLMAs) have been established by the County around four of the Towns: Hamilton, Leesburg, Purcellville, and Round Hill. As the name implies, the JLMAs are areas of joint Town-County interest and their boundaries set the limits for municipal water and sewer extensions. In that respect, the JLMAs can be viewed as the "urban growth boundary" around each of the four Towns.

With respect to transportation, a significant challenge facing the County and the Towns is to accommodate population growth and the resulting increases in traffic while maintaining the Towns' historic character. Many of the Towns are interested in introducing new traffic calming measures and pedestrian linkages.

The following is a list of CTP roads within the seven Towns and each of the four established JLMAs. Further discussion regarding transportation within the JLMA areas, including specific road improvements favored by the Towns, is provided in Chapter 9 of the *Revised General Plan*. Specific characteristics of each of the roads listed below are also included in *Appendix 1 (Planning Guidelines for Major Roadways)*. Additional information on roadways within each incorporated Town and JLMA may be found in the respective Town plans.

Town of Hamilton and JLMA

East Colonial Highway and West Colonial Highway (VA Route 7 Business), Hamilton Station Road (VA Route 704)

Town of Hillsboro

Charles Town Pike (VA Route 9), Stony Point Road (VA Route 719)

Town of Leesburg and JLMA

Harry Byrd Highway / East Market Street (VA Route 7), Leesburg Bypass (VA Route 7 and US Route 15), South King Street (US Route 15), Dulles Greenway (VA Route 267), Evergreen Mills Road (VA Route 621), Battlefield Parkway, Hope Parkway, Miller Drive, Airport Area Connector, Sycolin Road (VA Route 625), Kincaid Boulevard, Trailview Boulevard, Russell Branch Parkway, Cochran Mill Road (VA Route 653), Crosstrail Boulevard (VA Route 653 Relocated), River Creek Parkway (VA Route 773), Fort Evans Road, Riverside Parkway (VA Route 2401), Edwards Ferry Road (VA Route 773)



Town of Lovettsville

Berlin Turnpike (VA Route 287), East Broad Way and West Broad Way (VA Route 673), Lovettsville Road (VA Route 672)

Town of Middleburg

East Washington Street and West Washington Street (US Route 50)

Town of Purcellville and JLMA

Harry Byrd Highway (VA Route 7), East Main Street and West Main Street (VA Route 7 Business), Hillsboro Road / 21st Street North / 23rd Street North / 32nd Street South / Silcott Springs Road (VA Route 690), Berlin Turnpike (VA Route 287), Purcellville VA Route 7 North Collector Road, Purcellville South Collector Road ("A" Street)

A future VA Route 7 interchange is planned within the Purcellville JLMA, west of the Purcellville Town Limits, at or near the existing Hillsboro Road / 21st Street North (VA Route 690) overpass.

Town of Round Hill and JLMA

Harry Byrd Highway (VA Route 7), East Loudoun Street and West Loudoun Street (VA Route 7 Business), Evening Star Drive (Round Hill North Collector Road) (VA Route 1320), Woodgrove Road / Main Street / New Cut Road / Airmont Road (VA Route 719), Greenwood Drive, High Street Extended

A future VA Route 7 interchange is planned within the Round Hill JLMA, west of the Round Hill Town Limits, at the future intersection of Evening Star Drive and VA Route 7.

C. Land Development Application Review and Level of Service Standards

The County devotes attention to the comprehensive review of land development applications. The adequacy of the road network serving a property is frequently one of the most significant issues faced in the development process. The *Revised General Plan* and associated area plans outline where growth can occur and the allowable densities, while the *2010 CTP* provides direction concerning existing and planned transportation facility capacities.

The *2010 CTP* and *Facilities Standards Manual* (FSM) serve as a guide for all transportation improvements in the County. Specific provisions of the *Land Subdivision and Development Ordinance* (LSDO) and the Zoning Ordinance also address the intended purpose that various types of roads serve different kinds of development. Land development proposals are reviewed for conformance with the policies of the *2010 CTP* as well as to determine whether the planned transportation network can support the proposed development. The County provides specific criteria in evaluating applications that will be used to ensure that development does not lead to an inadequate level of service (LOS) on CTP roads and/or at the intersections of CTP roads. As discussed at the beginning of this chapter, in this plan, adequate LOS is defined as LOS D or better. Inadequate LOS is defined as LOS E or worse (LOS F). Development may be considered on roads with existing or projected inadequate levels of service provided that planned road improvements and/or developer-provided improvements are constructed to mitigate the development's impact on the network. These improvements must be consistent with the planned network as described in the CTP.

Level of Service (LOS) Standards Policies

1. Land development will only occur along roads or near affected intersections that currently function at Level of Service 'D' or better in the Suburban and Transition Policy Areas and will continue to function at LOS D or better with the proposed development or where planned road improvements would improve



the level of service to LOS D or better with the proposed development; alternatively, development may occur where the applicant provides the improvements consistent with the phases of the development in a timely manner such that LOS D or better is achieved or maintained. Improvements for each phase of a development will be fulfilled in advance of that phase.

In the Suburban policy area, where the application is (1) for non-residential uses, (2) defined as an infill development, conversion of existing development or revitalization, and (3) consistent with the planned land use, the County may consider development along roads or near affected intersections that do not meet the LOS D standard when a fair-share contribution towards the anticipated cost of the alternative transportation improvements is offered such that the safety of all users is ensured, it is acceptable to the County and VDOT, and, upon completion of the improvements, will result in LOS D or better. The fair share contribution will be based on the applicant's percentage of vehicle trips for the most intense use permitted by the rezoning as compared to the total number of trips projected for the affected roads and/or intersections as agreed upon by the applicant and the County.

2. Consistent with the rural roads policies, land development applications in the Rural Policy Area will be requested to make road improvements as necessary to ensure the safety of all users while protecting the character of the rural road network.
3. Level of Service 'D' or better must be demonstrated for new development at the time of the construction of the first residential unit or commercial/industrial building for each phase of the development in the Suburban and Transition Policy Areas, using peak hour and daily traffic volumes, for existing and future road networks.
4. A traffic analysis will be performed as required by the Zoning Ordinance and *Land Subdivision and Development Ordinance*. Traffic studies are required for land use applications regardless of the number of trips or the size of the development. However, the scope of the traffic study information can vary depending on the specific case and location. Transportation staff will meet with the applicant to discuss and staff will approve the scope of the study prior to submission.*
5. The actual capacity of the existing road network, or improvement completed prior to the completion of any approved land use, will determine the phasing of the development to be permitted in a rezoning.

*Note: Policy applies to County traffic study requirements; refer to *VDOT Traffic Impact Analysis Regulations Administrative Guidelines* for VDOT requirements.

D. Design and Construction Standards

It is important that the roads serving the Suburban, Transition, and Rural Policy Areas be designed and constructed in a manner which is consistent with the character of adjoining communities and land uses. Roads should fit and complement the communities they serve.

VDOT's *Road Design Manual*, *Road and Bridge Standards*, *Subdivision Street Acceptance Requirements* (SSAR) and *Subdivision Street Requirements* (SSR) contain design and construction standards required for roads to be incorporated into the State Highway System and for road improvements for those already a part of the State Highway System. VDOT has design standards for the wide variety of secondary roads that exist in Loudoun County, ranging from rural local roads to subdivision streets and collector roads. However, as the County developed policies to encourage creative forms of residential development and for preservation of the character of the County's rural roads grew so has the need for flexibility in the application of VDOT standards.

VDOT design standards are closely correlated with *A Policy on Geometric Design of Highways and Streets* prepared by the American Association of State Highway and Transportation Officials (AASHTO). VDOT



has been willing to consider modifications to specific standards for individual projects on a case by case basis. This process needs to continue.

While acknowledging VDOT's current design policies and standards, the County recognizes the limitations of the standard functional classification system, which emphasizes operating speed and carrying capacity. By balancing mobility with community livability and by utilizing context-sensitive design techniques, the County is committed to achieving a complete and multi-modal transportation network. Central to this commitment is the concept of the "complete street." A complete street is a road that is safe for motorists, bicyclists, transit vehicles and users, and pedestrians of all ages and abilities. The complete street focuses not just on individual roads, but on the decision-making and design process so that all users are routinely considered during the planning, designing, building and operating of all roadways.

Design and Construction Standards Policies

1. All new public roads will be planned and constructed to the standards of the Virginia Department of Transportation for acceptance into the State Highway System.
2. The County will use VDOT's *Road Design Manual*, *Road and Bridge Standards*, *Secondary Street Acceptance Requirements* (SSAR) and *Subdivision Street Requirements* (SSR) as applicable in the *2010 Countywide Transportation Plan*. In special cases, the County will coordinate with VDOT to employ standards appropriate to a project and/or seek changes in VDOT policies and standards to ensure conformity with the land use, environmental, heritage preservation and other policies of the *2010 Countywide Transportation Plan*, the *Revised General Plan* and the *Facilities Standards Manual* while providing a safe and cost-effective road network.
3. All road construction will be designed to balance mobility with community livability, including the use of context-sensitive design techniques, to create roads that are safe for all uses, including motorists, bicyclists, transit vehicles and users, and pedestrians of all ages and abilities.
4. As provided for in the *Facilities Standards Manual (FSM)* and VDOT's *Secondary Street Acceptance Requirements*, interparcel connections will be considered in development proposals in the Rural Policy Area, and required in all development proposals in the Suburban and Transition Policy Areas to achieve a local road network, and to help keep local traffic off regional roads.
5. Direct vehicular access is discouraged between individual residential and commercial lots. Direct access from individual lots to arterial and major collector roads is discouraged in the Rural Policy Area and not permitted in the Suburban and Transition Policy Area.
6. Local roads that provide individual lot access will be designed to be consistent with the character of the communities they serve. They must be pedestrian-friendly and provide for safe bicycling consistent with the *Loudoun County Bicycle and Pedestrian Mobility Master Plan*.
7. The County will work with VDOT to adapt and adopt road design standards to provide progressive, yet safe and economical access solutions for access management at entrances and intersections.
8. The County will use Scenic Design Guidelines in planning road improvements on all designated Virginia Byways in Loudoun County. Such design guidelines include the following (see also the Heritage Preservation Plan for additional information):
 - a. Lower design speed and narrower rights-of-way to minimize land acquisition and disturbance, and to reduce the need for removal of stone walls, treelines, fences and other such features, that often parallel roads. Lower design speeds also allow road alignments that follow the existing terrain and minimize road cut and fill areas.
 - b. Variable shoulder and ditch widths that are determined by the existing topography. Variable



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- shoulder widths could provide the flexibility to avoid removal of trees, stone walls or other such features.
- c. Landscaping on all cleared areas that includes indigenous plants, trees, wild flowers and other groundcover found in natural areas. Landscaping should be allowed as close to the road as possible while maintaining safe sight distance and clear zones.
 - d. Rest areas, “pullover” areas and other features that provide the opportunity for vehicles to pull off of the main travelway.
 - e. Construction material, such as light-colored pavement, guardrails and fences that reflect the historic and rural nature of the area (i.e., painted or rustic guardrails rather than steel). In the case of new bridges, abutments and other structures, exteriors and facades should be of materials, similar to the stone used in some of the historic bridges in the County.
 - f. In the case of arterial roads where a four-lane, divided section is proposed:
 - i. A variable median width should be used to allow the travel lanes to maneuver around features that are to be protected.
 - ii. Utilizing native species within the median should be used to reduce the visual impact of the road, yet allow appropriate and safe sight distance at crossovers and intersections.
 - iii. Each travel surface should individually follow the existing topography to minimize cut and fill areas and lower the road profile.
9. The Scenic Design Guidelines and other policies supporting the preservation of the character of rural roads will be applied in ways which will not impede the construction of improvements required for the safety of any or all users on rural roads.
 10. The County will work with VDOT to allow the use of maintenance funds to construct minor safety improvements.
 11. The County will work with VDOT to allow the placement of spot-improvement projects on the Secondary Road Improvement Program.
 12. The County will incorporate landscaped medians using native species where possible.
 13. The County will retain native vegetation and woodlands along roadways where possible.
 14. Signs will need to be erected by developers in locations where future street extensions are anticipated.
 15. The County will continue to seek opportunities to improve the planned and existing road network in the Suburban and Transition Policy Areas by encouraging additional connections between existing neighborhoods and between existing residential and employment areas such that a network of connections can be made with minimal disruptions and where it can be demonstrated that such connections will ultimately reduce congestion.
 16. Within the Suburban and Transition Policy Areas, the County supports VDOT’s *Secondary Street Acceptance Requirements* (SSAR) that require that new streets must satisfy specific public benefit criteria to be accepted into the state system, including the connectivity of road networks (in accordance with the connectivity index criteria as defined in the SSAR), appropriate pedestrian accommodations and public service criteria. The net effect of these requirements will be to develop a grid of local streets with integrated bicycle and pedestrian access.
 17. Twenty-five mph design speeds will be used for new local subdivision streets in all policy areas wherever possible.



18. The County will employ Intelligent Transportation Systems (ITS) technologies in the design of transportation projects where feasible in order to maximize the efficiency of the road network and alleviate congested corridors.

E. Traffic Calming

The County places a high priority on traffic calming and seeks to implement a countywide approach. The Institute of Transportation Engineers (ITE) has defined traffic calming as “the combination of mainly physical measures that reduce the negative effects of motor vehicle use, alter driver behavior and improve conditions for non-motorized street users”. Traffic calming must be community-based and supported. It is intended to modify driver’s behavior, reduce vehicle speed to legal limits, increase safety for all users of the roadway, and improve the quality of life through minimizing the negative effects of motor vehicles on the environment, streetscape and neighborhoods. It also should encourage the use of alternative modes of transportation such as pedestrian trails, bike paths and bus transit. Traffic calming is typically implemented on residential streets, but can be applied to other types of facilities in limited circumstances.

Common techniques for implementing traffic calming on residential streets include such traffic engineering components as:

- Vertical Changes in the Street (speed tables, raised intersections)
- Lateral Changes in the Street (chicanes¹, offset intersections, lateral shifts)
- Constrictions in the Street (narrowed pavement widths, pinch points, islands, traffic circles or roundabouts, entrance features, small corner radii)
- Related Streetscaping (surface textures, edge treatments, colors, landscaping, street trees and street furniture)

The County works closely with VDOT to implement traffic calming solutions through VDOT’s traffic calming program. This program is detailed in VDOT’s *Traffic Calming Guide* and Appendix B-1 of the *Road Design Manual*.

Traffic Calming Policies

1. The County will promote and implement traffic calming measures in all policy areas.
2. The County will seek to expand traffic calming through community-based and supported programs in the Suburban, Transition, and Rural Policy Areas and Towns through the proposed Community Plan process, new development applications, and through collaboration with VDOT on rural collector and arterial roads. The County’s commitment to maintain its unpaved rural roads is a de facto recognition of the traffic calming effect of these roads on local traffic.
3. The County will work with VDOT on developing traffic-calming plans as part of the Community Plan and development review process. Within the development review process, the County should identify and address potential traffic calming concerns that may result from a new development and ensure that the developer places emphasis on making streets less desirable for speeding and cut-through traffic.
4. The County will work collaboratively with VDOT and the community in identifying needed traffic calming measures in residential communities and Towns. Traffic calming includes both physical measures (traffic circles or roundabouts, raised cross-walks, chokers, chicanes, and speed tables) and non-physical measures (community education and enforcement). Measures will be analyzed to

¹Chicanes are a form of curb extension that alternate from one side of the street to the other.



determine the most effective tool for each project.

5. The County will work with VDOT to identify appropriate measures to manage cut-through traffic and through-truck traffic problems in residential communities.
6. The County will explore and implement safe, convenient, and visually attractive crossing alternatives to enable pedestrians and bicyclists to cross major thoroughfares pursuant to the *Loudoun County Bicycle and Pedestrian Mobility Master Plan*. Alternatives may include new intersection design, pedestrian and bicycle bridges and underpasses, and urban decks.²
7. The *Facilities Standards Manual* shall be revised to promote the incorporation of traffic calming into the designs for new developments.

F. Private Streets

The use of private streets in Loudoun County is only allowed for appropriate types of development. The County requires frontage on a public road maintained by VDOT for nearly all types of development. Exceptions to this policy include structures in historic districts, family subdivisions and low density subdivisions in the rural policy area. During the rezoning process, the Board of Supervisors may grant modifications to permit the use of private streets for single-family detached housing. Private streets serving townhouse and multi-family uses in PD-H districts may be permitted by-right, because such lots are most often accessed by a travelway, which also serves as a parking area. Contemporary townhouse developments use perpendicular or angle parking along the travelways. This feature is not permitted by VDOT design standards. All private streets must meet the design and construction standards of the County's *Facilities Standards Manual* (FSM). Maintenance of these private streets is the sole responsibility of the identified private sector entity. Such streets are not eligible for acceptance into the public street system.

VDOT continues to advise against the use of private streets for new development because of concerns related to continued maintenance, road network development, and other issues. The County has taken steps with the *Land Subdivision and Development Ordinance* (LSDO) to prevent public liability for the maintenance of private streets.

Road maintenance is an expensive commitment as it includes snow removal, landscape care, trash cleaning, and other activities, as well as the repair of road surfaces, curbing and drainage facilities. Generally, the maintenance responsibility for private streets falls to the homeowners association (HOA) or similar organization.

For successful HOA maintenance, it is important that its road maintenance program be adequately funded for current operations and a sinking fund established for reconstruction and emergency repairs. The maintenance program must ensure an adequate service level and be capable of providing access as soon as possible after snows or other emergency situations.

Transportation planning in Loudoun County has supported the concept of providing interparcel connections between adjacent development projects for appropriate land uses to create a network for use by local traffic. This practice keeps local trips off the major collector roads, freeing up capacity for through-trips and more regionally oriented traffic.

Private Street Policies

1. The County should continue to allow private streets in limited circumstances as provided for in and

² Urban decks are platforms of landscaped greens that span over major roadways. Examples include the park in Rosslyn, VA that spans over I-66 and other proposed urban decks in the region; one that would reconnect the Kennedy Center to nearby Washington, D.C. neighborhoods and another proposed for the Woodrow Wilson Bridge Project.



governed by the Zoning Ordinance, LSDO, and *Facilities Standards Manual* (FSM).

2. Neither the County nor the Virginia Department of Transportation will maintain any private roads. The maintenance responsibility will be insured by a bond or other long-range surety approved by the County before approval of the private road. In each case where County ordinances allow private streets, there will be language specifying what entity will provide the maintenance of the road and what public disclosures are necessary to expressly state that neither the County nor VDOT have, or will have, responsibility for the maintenance, repair or replacement of private streets.
3. Certain streets may require designs that are sensitive to contextual conditions. The designation of a design sensitive street as private may be appropriate where alternative solutions do not address the policies of this Plan. The private street designation will be made by the Board of Supervisors through the rezoning process or through County ordinances.
4. The County will use the mechanisms provided by the Zoning Ordinance to ensure long-term maintenance of private streets.
5. All sales material for properties located on private streets will disclose that there will be maintenance costs incurred by property owners for the upkeep of the street and that the maintenance and upkeep of private roads is not a County nor state responsibility.
6. The estimated annual cost for maintaining private streets will be provided by landowners to all potential purchasers of houses on private streets as part of sales documents.

G. Road Improvement Priorities

It is important that the County set priorities for its planned road improvements in order to be able to efficiently focus public and private resources on major projects needed in the short-term. Short-term priorities are established through VDOT's Six-Year Improvement Program (SYIP) and the Secondary Road Improvement Program (SRIP). Developed through the efforts of the Commonwealth Transportation Board, VDOT and/or County staff, these programs identify priority projects and reflect considerable effort by the County and/or VDOT in programming, designing, and funding actions. Priorities for road improvements in the CTP are identified in Appendix 3. Appendix 3 goes beyond the SYIP and SRIP and identifies near-, intermediate and long-term priorities for County projects through the year 2030. This methodology is consistent with that used by the Northern Virginia Transportation Authority for regional prioritization (described below and discussed further in Appendix 3). These priorities may be modified by resolution of the Board of Supervisors as necessary. Appendix 3 also contains a list of top priorities.

In November 2006, the Northern Virginia jurisdictions, VDOT and Virginia Department of Rail and Public Transportation (DRPT) working through the Northern Virginia Transportation Authority (NVTA) adopted the TransAction 2030 Regional Transportation Plan. This plan identifies critical transportation projects requiring funding within the Northern Virginia region through the year 2030. Working cooperatively, NVTA, their technical committee and a committee studying Alternative Transportation and Land Use Strategies (ATLUS) developed a series of project-based evaluation criteria for the purpose of assigning priorities to these projects. Each TransAction 2030 Plan project was rated against the criteria using a three level rating system: high, medium and low. The TransAction 2030 Plan is available for viewing on the NVTA website, at www.thenovaauthority.org.

Road Improvement Priorities Policies

1. The Virginia Department of Transportation Secondary Road Improvement Program (SRIP) and Primary Road Improvement Program will be the key processes for updating short-term road improvement priorities on a regular basis. The County will base transportation decisions on its land use policies and its transportation model outputs as well as the policies contained in the Heritage Preservation Plan and



the *Loudoun County Bicycle and Pedestrian Mobility Master Plan*. The TransAction 2030 Plan will also be considered. Projects which are part of Loudoun County Road Improvement bonds will receive high priority. Road improvements associated with development projects will also receive high priorities.

2. New road construction and road improvements will promote traffic, pedestrian, and bicycle safety including appropriate locations for transit stops and provide for improved vehicular and transit operations consistent with area land uses and regional demands while adhering to community design and resource protection policies and ordinances.
3. When third party sources are not available for high priority projects, the County will pursue alternate funding mechanisms.



Chapter 3

Transit and Other Mobility Options

The County supports and promotes the use of commuting options to the citizens, employees and visitors of Loudoun County. These commuting options include carpooling, vanpooling, transit, biking, telework and work schedule alternatives. Transit, also known as public transportation, can take many forms. It includes regional rail transit, such as Washington, DC's Metrorail service and Maryland's MARC train, as well as various types of bus service.

The County employs Transportation Demand Management (TDM) which is a group of strategies and policies designed to facilitate mobility options for residents, employees and visitors of the County, and to reduce single occupant vehicle (SOV) travel. These TDM strategies can increase the efficiency of the transportation system through the encouragement and facilitation of alternatives such as transit, car and van pooling, bicycling and walking. By providing these mobility choices, air and water quality can be improved, congestion can be reduced and citizens may enjoy a better quality of life. TDM measures also support the County's goal of creating walkable mixed-use communities because they help to reduce the need to build multi-lane roadways. In addition, alternative modes serve the mobility needs of a growing and diverse population, and help attract employers to the County. A balanced transportation system is vital to Loudoun citizens.

I. Transportation Demand Management

Over the next twenty years, Loudoun County and the Washington Metropolitan Region will face great challenges in managing its transportation system. The population of Virginia is expected to grow 20-25% by 2025.¹ This region is also the second most congested in the nation (2007). The state and the county can no longer build their way out of congestion. Instead the focus must be on how to best manage what is already in place and plan for the anticipated growth.

Transportation Demand Management (TDM) is key to improving utilization of existing facilities and services while accommodating growth. TDM programs help manage travel demand to make the systems more efficient. Its core mission is to move more people in fewer vehicles, move travel time out of the peak period, or, in the case of teleworking, eliminate travel time altogether. TDM focuses on people-oriented transportation choices and shared ride transportation solutions.

TDM is accomplished through a unique partnership between the Virginia Department of Rail and Public Transportation (DRPT), local commuter assistance programs such as Loudoun County Transit and Commuter Services, the Metropolitan Planning Organizations, various Transportation Management Associations (TMA's) and the Virginia Department of Transportation (VDOT). Heavy emphasis is placed on employer outreach to assist employers in developing or expanding employee transportation programs. DRPT provides Loudoun County technical and financial support through grant programs, research, training, and marketing assistance.

A. Benefits of Transportation Demand Management Programs

The benefits of enhanced investment in public transportation and TDM programs to Loudoun County and the region span a broad range. Some of the most notable benefits include:

- Improved Mobility and Travel Choice - Loudoun County must keep pace with the growing needs of its citizens. By adding more local and commuter bus routes and service, the County and its local

¹ Virginia Department of Rail and Public Transportation Website, 2009



transportation providers improve the mobility of its citizens and offer them a variety of ways to travel in and out of Loudoun County.

- **Reduced Congestion** - Public transportation serves to reduce congestion on many of the major highway facilities in Loudoun County. According to the Texas Transportation Institute (TTI – since 1950, TTI is the largest transportation research organization in the United States) the “congestion tax or what it costs the average rush hour driver in Northern Virginia per year for congestion is \$1,600 in 2007 dollars. This added cost can be reduced through transportation demand management programs such as transit, carpools and vanpools.
- **Improved Air and Water Quality** - In fiscal year 2007, the Loudoun County Commuter Bus Service (LC Transit) saved the County 16.9 tons of Nitrogen Oxides (NOx) and 5.23 tons of Volatile Organic Compounds or VOCs. These air pollution savings are based on a reduction of 21,867,046 single occupant vehicles miles traveled last fiscal year. Basically these numbers equate to improved air quality because passengers riding public transportation are not contributing to pollution by driving their own vehicles to work. Water quality benefits are accrued from reduced auto travel. Air pollution leads to atmospheric deposition (acid rain), a significant polluter of the Chesapeake Bay. Metal contaminants such as lead and copper are released in auto emissions and tire breakdown are added to the runoff of oils, fuels, coolants, transmission fluids, and road salts, all of which contaminate streams and other water bodies. Increased impervious surface area from roads and parking lots alters the natural flow of water resulting in heavier flow during storm events and leads to increased stream erosion and sedimentation. Erosion causes streams to become wider and shallower during normal flow, altering water temperature and thus changing stream habitat.
- **Improved Quality of Life** - Citizens who choose a form of commuting other than the single occupant vehicle may improve their quality of life. These improvements come from less stress of driving alone in congestion, time savings by using the high occupancy vehicle (HOV) lanes, better use of their time by riding in a bus or being a passenger in a carpool and cost savings by sharing the ride with other people.

B. Transportation Demand Management Programs

The County offers a variety of Transportation Demand Management (TDM) programs to County residents. These programs provide citizens with information and assistance to help them choose from the transportation options available. These transportation options include local and commuter bus service, rail transit, carpool and vanpool matching services, teleworking, bicycle and pedestrian facilities, park and ride lots and HOV lanes in neighboring jurisdictions.

- **Commuter and Local Public Transportation**, better known as transit – This strategy provides residents with the choice of riding a bus or train to and from work to their worksite in/or out of the County. It also provides citizens with a transportation option for other activities such as shopping, school or medical appointments.
- **Carpool and vanpools** – The County, through Commuter Connections, provides residents with information for potential carpools and vanpool matches. This information such as the potential carpoolers’ name, home area, employment site and work hours is contained in a match letter that is sent to those who inquire about carpooling. This information may encourage people to try carpooling/vanpooling with someone from their neighborhood or close by with shared destinations.
- **Employer Outreach** – County staff work with employers to develop strategies to reduce the number of single occupant vehicles traveling to worksites in Loudoun. Staff will work with each employer to tailor an individualized approach to providing transportation options to their employees.



- Telework – Telecommuting or working from home or a telework center reduces vehicle miles traveled, plus research demonstrates that people who telework are more productive. Staff promotes Telework!VA to employers within Loudoun County. Telework!VA is a state funded program that financially and informationally supports companies who want to start or expand telework programs.
- Bicycle and Pedestrian facilities – These include bike and pedestrian paths connecting to employment sites and major regional bike trails. See Appendix 6 and the *Loudoun County Bicycle and Mobility Master Plan* for the County’s Planning Guidelines for Bicycle and Pedestrian Facilities.
- Park and ride lots and HOV lanes – Commuter lots encourage people to try transit and ridesharing if there is convenient, designated parking for their personal vehicle. HOV lanes allow carpooler/vanpoolers and transit to save travel time.

II. Public Transit Mode

In Loudoun there are currently three types of transit options. The first option is the County-managed commuter bus system called Loudoun County Transit, or LC Transit. This bus service operates commuter coaches that pick up at park and ride lots within Loudoun and take passengers to various destinations in the Washington Metropolitan region. Destinations include West Falls Church Metrorail Station in Fairfax County, Rosslyn and the Pentagon in Arlington County and numerous stops in the District of Columbia. Some commute trips to Loudoun County are also accommodated by this service in a Reverse Commute route from West Falls Church Metrorail and the Herndon/Monroe Park and Ride to employment campuses in Loudoun County. This commuter bus service is planned and managed by the County and operated by a private transportation provider contracted by the County.

The second transit option is a network of local fixed route buses that traverse roadways within Loudoun County. There are currently nine fixed bus routes, three of which run exclusively within the Town of Leesburg. Residents can board a bus in the western end of the County in Purcellville, transfer at various hub locations and end up at the Fairfax/Loudoun County line. This service is managed and operated by Virginia Regional Transit (VRT), the rural transit provider for Loudoun County.

Residents can also use the on-demand or curb to curb service provided by VRT in Loudoun County as a means of using public transit where fixed route service is not available and/or when extra assistance is needed to access transit vehicles. All citizens of Loudoun may use this type of service. The operator of this service will make every attempt to schedule as many demand response trips as logistically possible with the equipment available. This service requires that residents request their trip at least 24 hours in advance so the equipment can be scheduled accordingly for each day.

The transit portion of this chapter is a long-range transit plan with three phases: Phase I represents service recommendations in the near-term, before Metrorail is extended to the Reston area of Fairfax at Wiehle Avenue, Phase II represents the mid-term when Metrorail would be in service to Wiehle Avenue, and Phase III represents the long-term period up to 2030 when Metrorail would be in service to Loudoun County with metro stops at Dulles Airport, Route 606 and Route 772.

A. Guiding Principles of Transit

Branding: Transit services developed for Loudoun County will integrate commuter, fixed-route and demand-response systems under a common graphics theme readily identifiable to the public as the County’s Public Transit System. The services should be recognizable and known by the public, reflecting the high level of expectations for Loudoun County services. Concepts include a recognizable name and logo at transit stops and the integration of customer service, trip planning, and system information in multi-lingual formats.

Partnerships: Public, business and community partnerships will be used to “get the word out” about the transit services available and to enhance awareness. Business and community partners should participate in marketing,



outreach and development of services. Techniques may include advertising to riders and targeted focus group meetings.

Performance: Transit services in Loudoun County will be held to performance standards and will be monitored and adapted on an annual basis to ensure the services are effective and efficient. Ongoing tracking of performance indicators and periodic review and modification of routes will provide enhanced accountability to the riding public and a quantifiable measure of success for new routes and service changes.

Integration: Connectivity between activity centers within and outside Loudoun County will be improved with the objective that no more than one transfer is needed to reach major activity centers outside Loudoun County. Within Loudoun County, existing transfer hubs should be extensively integrated with surrounding developments. Isolated park and ride lots should either be moved or greatly enhanced for pedestrian/bicycle access.

Service Hours: As funding is available, service hours will be expanded to synchronize fixed-route service with some early morning commuter routes and all returning evening trips. Limited Saturday service will be introduced with focus on retail, tourism, and other economic development opportunities. As such, extended evening and weekend service shall target both service employee and retail shopper needs.

Transit-Supportive Policies: The transit plan will include the policies that will foster greater transit use through incentives or management of parking, supportive services, and other public/private initiatives. Specific strategies to limit parking where walking or transit service is available and/or charge parking fees, employer transit reimbursement, guaranteed ride-home (rides given to transit riders who need to leave work for unexpected emergencies, etc.) and other supportive services will be investigated for applicability. In addition, at designated transit nodes, strategies to removing barriers for pedestrian, bicycle and wheelchair access to the transit node from surrounding neighborhoods (such as limited access highways or arterials with inadequate pedestrian crossings) will be identified. The transit node area and adjoining public spaces will be made accessible to persons with disabilities, to include the provision of such improvements as audible pedestrian signals.

B. Transit and Land Use

A number of land use attributes that enhance quality of life and support transit use include:

- A compact urban form, encouraging development around transit nodes while allowing for preservation of open space elsewhere,
- Economic development that attracts employers and businesses that desire to locate near transit,
- An increase in the number of residents and employees within a ¼ to ½ mile radius of a transit stop,
- A variety of complimentary land uses in transit corridors,
- A safe and aesthetically pleasing environment for pedestrians and bicyclists, and,
- A limited supply of free parking where transit provides an alternative to travel by automobile.

Of these attributes, compact residential and employment densities are the most important factors associated with transit use.² The greater the number of people near a transit system, the greater the potential ridership on that system (see Table 3-1). Similarly, areas of concentrated commercial development with a greater concentration of jobs per acre provide destinations for potential transit riders. While ridership is dependent on a variety of different conditions, a review of national and international research sponsored by the Federal Transit Administration (FTA) suggests minimum levels of transit service appropriate for various residential land use densities.

² Transportation Research Board, National Research Council, Transit and Urban Form, Transit Cooperative Research Program Report 16, Volume 1, 1996.



Table 3-1 Relationship Between Residential Densities And Different Types of Transit Services³

| Boris Pushkarev and Jeffrey Zupan (1982) recommend the following densities | | | |
|---|--------------------------|------------------------|---------------------------|
| Service Levels | | | Density Thresholds |
| Bus: minimum service | ½ mile between routes | 20 buses/day | 4 du/acre |
| Bus: intermediate service | ½ mile between routes | 40 buses/day | 7 du/acre |
| Bus: frequent service | ½ mile between routes | 120 buses/day | 15 du/acre |
| Light Rail: | 25-100 sq-mile corridor | 5-minute peak headways | 9 du/acre |
| Rapid rail (Metrorail): | 100-150 sq-mile corridor | 5-minute peak headways | 12 du/acre |
| Commuter rail (VRE): | Existing track | 20 trains/day | 1-2 du/acre |

Transit and Land Use Policies

1. The County will direct new development to identified transit corridors and zones that are outlined in the *Revised General Plan* for economic, environmental, social and other reasons that will improve the viability and cost-effectiveness of the future transit services and reduce traffic congestion in the Suburban Policy Area where applicable. The County will require design features to improve transit accessibility and efficiency, such as grid street patterns and streetscapes that accommodate pedestrians and bus stops.
2. The *Revised General Plan's* land use map depicts the two transit nodes located along the Dulles Greenway. Characteristics of these areas shall include:
 - a. Cooperation of property owners with the public sector (the County, WMATA, MWAA, DRPT, etc.) to provide adequate transit facilities and connections for all modes to support maximum use of the transit system; and
 - b. Major access roads will be located on or near the periphery of the Transit Nodes to avoid conflict with transit services and pedestrian traffic (e.g., Mooreview Parkway and Shellhorn Road).
 - c. Reducing parking requirements for development near transit nodes once transit becomes available in order to encourage transit usage. Techniques to achieve reduction in parking requirements may include: pricing, shared parking, reduced or maximum on site parking requirements, and on street parking counting toward on site parking requirements.
 - d. Strategies to remove barriers for pedestrian, bicycle and wheelchair access to the transit node from surrounding neighborhoods (such as limited access highways or arterials with inadequate pedestrian crossings). The transit node area and adjoining public spaces will be made accessible to persons with disabilities, to include provision of such improvements as audible pedestrian signals.
3. The County may permit interim development in transit corridors (Rt. 7, Rt. 50, Rt. 28 and the Dulles Greenway) at densities lower than those needed to support viable services. This will be limited to situations where there will be a tradeoff benefit (e.g., ongoing revenue stream to subsidize the service, analogous infusion of capital/in kind contribution, or combination) associated with the development, which promotes the viability of intended transit services.

³ Ibid



4. Development of transit facilities and transit centers, defined as a fixed location where passengers transfer from one route to another, in the County's designated Urban Center is an integral part of the county transit plan; the designated Urban Center at Dulles Town Center is a critical origin, destination and transfer point of recommended transit services. Additional transit centers will be identified in the future through the Community Plan process and the land development application process.
5. The County anticipates that a minimum 10% mode split will be achieved through the land development application process for applications within the transit corridors. Mode split is defined as the proportion of people that use each of the various modes of transportation. Strategies to achieve this goal should be identified and an implementation plan defined as part of the application.
6. The County will assess applications related to transit nodes in terms of station access needs, circulation, improvements, pedestrian-friendly design and other key features related to transit-oriented development.

C. Commuter Bus Service

In the 1970s and early 1980s, a privately owned and operated commuter bus service called the Sterling Commuter Bus carried passengers from eastern Loudoun County to destinations in Washington, D.C. In 1993 the service encountered financial difficulties and in 1994 the County assumed the operation. In the fourteen years since the County began operating the service, passenger volumes have grown steadily. Annual ridership over the last 13 years has grown from 44,873 annual passenger trips in 1995 to 890,011 in fiscal year 2009.

The commuter bus program is currently divided into three distinct routes and types of service. The first, which is the original type of service provided by Loudoun, is the service from strategic park and ride lots traveling all the way into the core of Washington, D.C., and sometimes called "long-haul" service. Park and ride lots with this type of commuter bus service are located in the Towns of Purcellville and Leesburg. Another lot, the Dulles North Transit Center, is located at the intersection of Moran Road and Lockridge Road serving the residents of Ashburn and Sterling. The Dulles South lot is located in Stone Ridge and serves the commuters in Stone Ridge, South Riding and neighboring smaller developments. The average distance traveled for passengers on these buses is about 38 miles each way, averaging about an hour and ten minutes of time on the bus.

The second route/service is shorter in distance and time. Commuter buses pick up from the northeast portion of Loudoun (Broad Run Farms, Cascades and Lowes Island) and travel to the West Falls Church Metrorail Station only. This service provides the much needed link to the Metrorail system of rail and buses as well as other local bus systems. Travel time is about 35 minutes and 15 miles one way.

The third commuter bus service is called the Reverse Commute bus. Passengers board from the West Falls Church Metrorail Station and travel to employment centers in Loudoun County. This service has expanded to include destinations in Sterling and Ashburn. These buses also provide a connection to the local fixed route service provided in the County.

In 2003 Loudoun County made the decision to purchase its own fleet and contract out only the operation and maintenance of the equipment. That year the County applied for and received State Capital Assistance funds and Governor's Congestion Relief funds to combine with State Dulles Toll Road Set Aside funds and lease/purchase financing to acquire 22 MCI D4500 commuter coaches. In February 2004 the first of the 22 commuter coaches arrived in Loudoun County. The buses are 45 feet long and accommodate 55 seated passengers with amenities such as reclining seats, restrooms, reading lights and LED destination signage. The coaches are also embellished with the LC Transit logo and phone number. The County continues to purchase commuter coaches and as of March 2009 had 38 buses in the commuter fleet.

Operation of the Commuter Bus service is primarily covered by passenger fares. Including the annualized cost of the bus fleet, the fares cover approximately 50 - 60% of annual system costs, with the remainder covered by the state operating assistance and county gasoline tax revenues. Research and analysis for the transit plan indicates that this service may be able to attract similar levels of ridership with a higher fare that would fully cover system costs. This



will be an important consideration in the future when Loudoun County is required to contribute its gasoline tax revenues to the regional Compact that funds Metrorail.

A survey of commuter bus riders in 2008 indicated that these riders are “choice riders” who can afford other modes of transportation but choose this service for reasons that include the ability to do other things while commuting, time savings, and the convenience of point-to-point service. While the cost of this service compares favorably to the cost of commuting by auto, cost savings was not one of the top reasons indicated by riders for choosing this service, suggesting that higher fares might be feasible without significant loss in ridership.

In terms of fare recovery and customer service, the commuter bus service is highly successful and compares favorably to peer systems. The transit plan recommends expansion of commuter bus service in the near-term, including park and ride lots in growth areas as well as near the county border where shifting car drivers to buses can contribute to reduced congestion. In the long-term, the plan examines the tradeoffs between the option of continuing commuter bus service at a fare that would sustain the full costs of the service and the option of modifying the service to strictly provide connections to Metrorail stations in and near Loudoun County.

A type of commuter service that does not exist at present is one that provides direct connections between Loudoun residents who work in Fairfax employment centers, as well as Fairfax residents who work at Loudoun employment centers. This concept was initiated by the TPAC early in the transit plan process, and market research confirms that there is significant movement between eastern Loudoun and Fairfax County in both directions for commute trips. Many of these trips could ultimately be served by the Dulles Corridor Metrorail between Loudoun County and Tysons Corner. However, it would help serve current needs as well as help build ridership for Metrorail to provide a point-to-point service between Loudoun locations and Herndon, Reston, and Tysons Corner in Fairfax County. Another potential corridor for this type of service is the Route 28 Corridor from Route 7 to Manassas. In the transit plan, this service is called Inter-County service and it would be a unique service in terms of vehicle type and fare structure and would involve Fairfax and Prince William Counties, as well as Dulles Airport. As Dulles Corridor Metrorail is developed in Phase II and Phase III of the transit plan, the Express bus services would be modified to directly link passengers to the Metrorail station in the corridor.

D. Fixed Route Local Bus Service

A coordinated system of fixed route bus service is offered in Loudoun County. This system currently has six local fixed routes with three additional routes within the Town of Leesburg. The routes come together at various locations called hubs that allow for transfers between the fixed routes. Most of the fixed route service operates weekdays only and on either half-hour or hour headways. The fixed routes also provide a connection to the Fairfax Connector bus service at the county line at Dranesville Road and Route 7 and the Washington Metropolitan Area Transit Authority (WMATA) metrobus service at Dulles Airport. These connections provide passengers the opportunity to travel to parts of Fairfax County as well as to numerous locations in Arlington and Washington, DC including Metrorail stations. This service is currently planned by OTS staff and operated by the state designated rural provider for Loudoun County, Virginia Regional Transit (VRT). Funding is from a combination of federal funds, state funds, local gasoline tax, and other resources.

An on-board survey of local bus riders conducted in 2008 revealed that the ridership of local fixed routes is predominately “captive” transit riders who do not have another mobility option due to financial or other constraints. A profile of typical riders based on the highest shares of survey responses consists of a person making a trip between home and work who rides the bus five days a week, does not have access to a personal automobile, and has a household income below \$25,000 a year.

Based on the input from the TPAC, the results of outreach to riders and senior citizens, and assessment of the performance of local routes, there are several ways the local bus services could be improved. The routes that are not attracting sufficient riders should be examined for modification, either to provide more efficient service where there appears to be a ridership base, or to a demand-responsive type of service where the ridership pool is inadequate for regularly scheduled service. Input from the public also indicated a desire for better connections and fewer transfers



for travelers between Loudoun and Fairfax Counties. The Express Bus service recommendations are one response to this need, and for the local routes, recommendations include increased connections between the Sterling/Potomac and Herndon areas. Service to Herndon would provide better connections to Fairfax Connector bus service than the current transfer point at Dranesville.

The financial analysis indicates that contracting local bus services from VRT is a favorable arrangement for providing these services. This is important since the local routes serve primarily transit-dependent populations or “captive” riders at this time – these services should be provided as affordably as possible both to riders and by the County. However, to provide the most cost-effective service, there is a need for ongoing reporting to Loudoun County by VRT on route performance measures, so that under-performing routes can be examined for changes and service levels can be adapted as appropriate. Transit plan recommendations focus on enhancing service in the eastern areas of the county where both transit-supportive densities and transit-dependent populations occur, particularly in the Sterling/Potomac area, and on linking in-bound commuters to the employment centers in eastern Loudoun County.

During the implementation timeframe of the transit plan, the portions of Loudoun County classified as “urban” by the U.S. Census will grow. Currently all but the northeastern tip of Loudoun County (east of Route 28) is outside the urbanized area by U.S. Census definitions. After the 2010 and 2020 censuses take place, a greater portion of the county, potentially as far west as Leesburg, will be classified as urban. This change may affect the eligibility of local transit service for rural transit funding. This rural funding is a major reason the current services are comparatively affordable. If the funding eligibility changes in the future, the operating arrangements for local transit will also need to be revisited.

E. Demand Responsive Local Bus Service

Specialized transportation also known as curb-to-curb service is available to the citizens of Loudoun County. This demand response service provides travel assistance from a resident’s home to locations in Loudoun for medical appointments, shopping and other basic needs destinations. Fares vary throughout the County based on the length of trip and users of this service are required to call 24-hours in advance to make reservations. Trips will be arranged where logistically possible. The current operator complies with all ADA rules and regulations. Citizens who live within ¾ mile of a fixed route are asked to catch the bus along the fixed route. Citizens may also complete an ADA application if they live within the ¾ mile range and need ADA services. The operator of this service will make every attempt to schedule as many demand response trips as logistically possible with the equipment available for specified areas of the County. This service is currently operated by the state designated rural provider for Loudoun County, VRT. Funding is from a combination of federal funds, state funds, local gasoline tax, and other resources.

As the population of Loudoun County changes, there is an important role for demand responsive local bus service to fill gaps in the mobility options for residents. Increasing numbers of elderly populations, particularly in the rural areas, require assistance to receive medical care, pay bills, receive government services, etc. in the towns and the eastern part of the county. This type of need can be fulfilled by the existing services, although some efficiency might be introduced by offering voucher-based private services in addition to the existing services. Particularly in the rural areas of the county, the use of smaller vehicles could be used when handicapped accessibility is not required. Another role for demand responsive services is to provide a lower-cost, flexible option for transit in areas that have a cluster of activity centers but lack the density to support fixed route transit. This alternative is called “check point” service and it provides a cost-effective option for regularly scheduled transit in less densely developed suburban areas. Checkpoint service allows the location of demand-responsive vehicles to be known by the general traveling public at specific locations and time intervals. This allows others to utilize an on-demand route without advanced reservations. The timing of arrival at checkpoints will accommodate a variety of routes the vehicle may take (based on demand) to reach the next location. Where some fixed route alternatives that were suggested by the public and the TPAC did not meet performance criteria, check point service is proposed as a short-term or long-term option as appropriate.



Subscription service refers to a mode of operation in which individuals "sign up" or subscribe to ride in a particular vehicle on a regular basis from the same origin to the same destination. The purpose of the trip and the type of vehicle used can be many and varied. Subscription routes require passengers to pay their fare in advance, for a pre-determined period of using the bus, such as for one month. Specific routes can be operated by separate entities, either public or private. Typically, subscription bus service is employment based and could be used to bring a group of employees to one central site in the morning and return them in the evening. While subscription service is a variation of ride-sharing, the key difference is that vehicle routes and travel times are established in advance through coordination with a group of individuals.

Conclusions (associated with sections C, D and E)

The analysis of transit services indicates that there are several strong markets for transit service now and in the future, including:

- Local fixed route service, primarily in eastern Loudoun County and along the Route 7 corridor to Leesburg and Purcellville.
- Express bus services that would serve the cross-commuters between Loudoun and Fairfax Counties in the near future, ultimately to be largely replaced by Dulles corridor Metrorail service.
- Reverse-commute local routes that serve key employment corridors, linked to Metrorail as it advances towards and into Loudoun County.
- Inter-county service along Route 28 from Manassas to Route 7.
- Park and ride lot based commuter bus service throughout the eastern part of the County, and along the Route 7 corridor.
- New commuter routes that would serve in-bound commuters from western Virginia, West Virginia and Maryland, offering opportunities to transfer to local routes serving the Loudoun employment corridors.
- Diversified demand responsive transit service that would offer transitional services to areas with demand that falls below the thresholds for local fixed route service, offering a wider array of mobility options particularly to elderly and transit-dependent populations.

Public Transit Policies (associated with sections C, D and E)

1. The County will take the lead to expand transit services that are responsive to growth, congestion and air quality demands on the region.
2. County involvement in transit will be implemented based on the transit service recommendations detailed in this chapter. These recommendations include modifications to existing services, expansion of service hours and service days, and introduction of new routes and services. The County will continue to plan, coordinate delivery of, and manage service through contracts with private operators.
3. The County will provide technical and financial support for transit programs meeting identified needs described in Appendix 5, Transit Analysis.
4. County financial assistance for transit programs will be based on the following objectives:
 - a. The County will strive to maximize the cost effectiveness of all transit and rideshare programs subsidized by the County through review of route performance and costs. Underperforming routes (routes where ridership does not meet performance criteria) will be refined to maintain system efficiency. Where services are provided by contractors, these performance indicators will be provided by the contractors to the County for evaluation purposes.



- b. The County will promote the use of transit services as an alternative to the single occupancy vehicle, including the linkage of local routes and commuter routes to promote all-transit commuting where feasible.
- c. The County will promote the use of transit services by transit dependent individuals through fare assistance and coordination of services with other transit providers within and adjoining Loudoun County.
- d. The County will promote the use of transit services with outreach efforts that may include public transit workshops and transit friendly user guides.
- e. The County will strive to continue bus transit services when gasoline tax funding resources are required to be devoted to Metrorail in the future. Strategies to continue these services may include development of new revenue sources for local and/or commuter services and increasing commuter bus fares to a self-sustaining level that would no longer require County subsidy.

F. Dulles Corridor Metrorail Project

The Dulles Corridor Metrorail Project is one of the County's and Region's priority transportation projects. Once completed, this system will bring rail transit service to Loudoun County with stops at Dulles Airport and at transit nodes in the vicinity of Route 606 (Old Ox Road) and Route 772 (Ryan Road) along the Dulles Greenway. This project is a result of a Major Investment Study (MIS), which recommended extending Metrorail from the vicinity of the West Falls Church station in Fairfax County through Tysons Corner and Reston along the Dulles Airport Access Road and along the Dulles Greenway into Loudoun County. Although not part of the current project, the Town of Leesburg envisions in its Town Plan an extension of Metrorail all the way to Leesburg, extending along the remaining length of the Dulles Greenway. The Dulles Corridor Metrorail Project has been incorporated into the regional CLRP, endorsed by the National Capital Region Transportation Planning Board (TPB). The project has been divided into two phases, with Phase 1 scheduled to be operational to Wiehle Avenue in Reston by 2013 and Phase 2 scheduled to be operational to Route 772 (Ryan Road) in the Ashburn area three years later. Construction on the first phase is funded and began in 2009; contracts and schedules are not yet in place for the second phase. Service on the new Metrorail line will continue from stations in the Dulles Corridor onto existing Orange Line tracks and serve existing Orange Line stations from East Falls Church in Arlington County to Stadium-Armory in Washington, DC. With the arrival of Metrorail service to Loudoun County, existing bus transit service will be altered to serve changing commuter patterns.

This project is considered particularly important for the County's transportation system as it provides vital surface transportation links to Dulles Airport and offers convenient commuting opportunities for County residents who work in Fairfax County and other jurisdictions in the Region's core. The Route 606 and Route 772 stations will include approximately 2,750 and 3,300 parking spaces, respectively, in support of regional commuters. The project will also benefit employees who travel "reverse commutes" from neighboring jurisdictions to employment centers in Loudoun County.

Without this project, congestion levels on all three major east-west roadway connections to Fairfax County and the Region's core may reach intolerable levels, leading to serious impacts on the economic health of the County. Moreover, by 2020, the region will need this project in order to stay within its emissions budget and satisfy the requirements of the Clean Air Act. The County has demonstrated its strong commitment to the project through the identification of local funding sources in the adopted Capital Improvement Program. These funds will be pooled with other funds dedicated by the Metropolitan Washington Airports Authority (MWAA), Fairfax County, as well as the state and federal governments.

On June 19, 2007, The Board of Supervisors authorized the County Administrator to sign the Memorandum of Understanding entering the County into a three-party Funding Agreement with Loudoun, Fairfax, and the Metropolitan Washington Airports Authority for the purpose of constructing Metrorail to Loudoun County.



Dulles Corridor Metrorail Project Policies

1. The County will facilitate the implementation of rail service in the Dulles Greenway corridor. This service will serve Fairfax County locations in the corridor and extend to Loudoun County stations at Dulles Airport, Route 606/Dulles Greenway and Ashburn (Route 772).
2. The County, in partnership with VDOT, WMATA and/or other appropriate agencies, will ensure that land needed to provide planned transit improvements (e.g., Metrorail parking lots, separate rail rights-of-way, dedicated bus ways, etc.) is obtained or reserved prior to or during the process of reviewing land development applications which affect such land. Land acquisitions and reservations will take into consideration both the near-term and ultimate transit system configurations.

III. Transit Service Recommendations

The recommendations for transit services in Loudoun County were developed based on the service evaluation, the Transit Analysis (Appendix 5), and input from the TPAC and the public. A set of alternatives was developed that reflected the requested transit services, and these alternatives were tested using a travel demand model that includes transit. The model is the very latest developed by the regional transportation planning agency (MWCOC) to reflect the choice between travel modes. The model bases this choice on a user benefit calculation that considers both cost (fares for transit; tolls, parking and operating costs for vehicles) and time (wait, walk and ride times for transit; congested travel times for vehicles). For each time period tested, a unique roadway network was included in the model reflecting the extent of roadway improvements anticipated to be in place at that point in time. The anticipated roadway improvements affect both transit and automobile travel times and thus may have an impact on the outcome of the modeling exercise. For each plan phase, the model provided ridership forecasts by route, and using this information, each route was evaluated on the basis of “productivity” in terms of forecasted passengers per hour, and cost in terms of net cost per rider and total net cost per route. Routes were also evaluated on the basis of the extent to which they serve transit-dependent populations and the opportunity to address traffic congestion.

A. Transit Plan Phase I

The recommended routes are discussed in the categories of local fixed route service, inter-county fixed route service, express service, and commuter service. A summary of the recommended routes by service category and phase is provided in Table 3-2 (on page 14). The routes are depicted graphically in Figures 3-1a through c (on page 17). For Phase I, among the entirely new routes proposed, the most promising and least net cost routes to implement are the proposed new commuter route from the Ashburn North Park and Ride lot and the express route from Dulles Town Center to Fairfax. The proposed express route from the Dulles North Transit Center to Fairfax County (i.e., Herndon, Reston and Tysons) also would be a top recommendation.

Local Fixed Route Service

The existing, modified and new local routes recommended in Phase I include:

- 7 to 7 on 7 (Existing): Service along Route 7 from Leesburg to Dranesville Road in Sterling. Stops include Inova Loudoun Hospital, George Washington University, Dulles Town Center, Cascades and NOVA.
- Purcellville Connector (Existing): Service from Purcellville and Hamilton to Leesburg
- Ashburn Farm Shuttle (Existing): Service from the Ashburn Farm area to Dulles North Transit Center
- Ashburn Village Connector (Existing): A circulator loop through Ashburn Village, Farmwell Road, Loudoun County Parkway to Inova Loudoun Hospital
- Atlantic Circulator (New): Peak period commuter-oriented service between Dulles Town Center and the Dulles North Transit Center with buses traveling along Atlantic Boulevard, Pacific Boulevard and local streets surrounding those arterials



- Sterling Circulator (modified from existing Sterling/Countryside): New circulation pattern both north and south of Sterling Boulevard connecting to service at Dulles Town Center and Dranesville Road

Among the existing local fixed route services, the **7 to 7 on 7** remains a highly productive route. The **Purcellville Connector** is also recommended to continue relatively unchanged. While this is not a very productive route, the net cost of this route is reasonable and it provides an important connection to the western part of the county. As discussed below, the Ashburn Farm Connector did not meet performance criteria and is not recommended to be continued; the **Ashburn Village** and **Sterling/Countryside** routes are recommended to be continued with modifications; and the **Dulles 2 Dulles** route is recommended to be discontinued when two new routes that cover its service area with better performance are implemented. The **Ashburn Farm shuttle** is a new route that is being pilot-tested, and it is recommended for continuation based on projected performance.

An important type of local route in the transit plan is a set of north-south circulators along key corridors – local routes along the Route 28 business corridor (on the parallel local access routes) and the Loudoun County Parkway. A fourth circulator route would connect the Dulles South (Route 50/Arcola) area to the Metrorail stations. In Phase I, these routes connect the cross-county commuter services along the Dulles Greenway with the key employment activity centers reaching up to Route 7. The role of these routes in Phases II and III is to link reverse-commuting Metrorail riders from the end-of-line stations to the Loudoun employment corridors. One of these routes could begin in Phase I given that it was projected to have moderate to good performance: namely, the **Atlantic Circulator**. However, this route would have a lower priority for Phase I implementation due to potentially high cost and lesser performance than other recommendations. The Atlantic Circulator is designed to connect the Dulles North Transit Center with Dulles Town Center via the roadways paralleling Route 28 where many office parks are located. If implemented in Phase I, the Atlantic Circulator would replace the Dulles 2 Dulles Route and would include a loop on the west side of Route 28 that would enable continued service to employment centers currently served by that route. This portion of the Atlantic Circulator would be replaced by the Pacific Circulator when completion of Pacific Boulevard (anticipated in Phase II) and growth in ridership would allow that additional route to be implemented. Note that these circulators would evolve over time as segments of the roadways proposed to carry them are completed, particularly on Loudoun County Parkway and Pacific Boulevard.

Additional and modified services were tested in the Sterling/Potomac area in response to public comments received during community outreach meetings held in Sterling and Potomac during 2008. These include better circulation through the activity centers of Sterling and Potomac and better connections to transfer centers including Dulles Town Center, Dranesville and Herndon/Monroe in Fairfax County. These routes did not have the strongest performance in the model, but because they serve areas with concentrations of transit-dependent populations, actual ridership could be higher than the model predicts. The recommended **Sterling/Potomac Circulator** route is a hybrid of the routes tested that would serve a greater number of activity centers than current service and, through the Dulles Town Center and Dranesville transfer centers, would also provide greater access to destinations along Route 7 and in nearby Herndon.

Several routes tested for Phase I were found to be poor performers not warranting fixed route service. These include a route from Purcellville to Brunswick to provide service to Lovettsville and the MARC rail station in Brunswick, MD; extension of the Purcellville Connector to Round Hill; a set of circulators in the Arcola/Brambleton and South Riding areas; and a modified Ashburn Farm Circulator (note that the existing Ashburn Farm route also does not meet performance criteria). Development densities in these areas, combined with other factors such as bus travel times compared to auto travel times, do not meet the characteristics necessary to support fixed route transit. Transit services for these areas are addressed further under the Demand Responsive Transit section of this chapter.

Inter-County Fixed Route

A route along **Route 28** extending through Prince William County to Manassas was tested. While originally envisioned as an express route, this route is recommended as a local fixed route service in Phase I. It is recommended to include service to Dulles Airport and limited stops focused on transfer points in order to ensure reasonable travel times. One reason for the route modification is that this route, in combination with the Atlantic Circulator discussed above, appears to draw ridership away from the existing Dulles 2 Dulles service. Preliminary



analysis of the route based on the travel demand model suggests that it serves activity centers throughout the corridor, including Dulles area employment centers, but much of the population boarding the route would be from Prince William County. As such, if the route serves Loudoun employers and residents of Loudoun, Fairfax and Prince William counties, it should be explored with Prince William County's transit provider PRTC, as well as Fairfax County and MWAA, for possible joint service.

Express Routes

Recommended Express Routes include the existing **Cascades** route, as well as new routes to Fairfax County employment and/or transfer centers originating from **Dulles Town Center** and **Dulles North Transit Center**, as described below.

The objective of most new Phase I routes is to provide additional commuter services to both Loudoun residents working in Fairfax County and inbound commuters to Loudoun jobs. The market analysis for the transit plan showed an extensive "churn" of cross-commuting between Loudoun and Fairfax Counties, particularly from eastern Loudoun. Accordingly, these types of commuter routes are forecast to be very successful. In Phase I, they include stops in Herndon, Reston and Tysons Corner, areas that are both key destinations and transfer points in Fairfax County. These new "express" routes originate from Dulles Town Center and Dulles North Transit Center, with transfers available at these locations from other County routes, thereby providing a high level of service for Loudoun County commuters to Fairfax County employment centers. The **Cascades** and **Sterling/Potomac** express routes have stops in the Sterling and Potomac areas; the Cascades route goes to the West Falls Church Metrorail station, while the Sterling/Potomac route goes to Tysons Corner with the interim stops listed above. The **Dulles Town Center** express route uses Route 28 and the Dulles corridor to access Herndon/Monroe, Reston and Tysons Corner, and the **Dulles North** express route would directly access the Dulles corridor. These services meet existing commuter needs, which make them successful in Phase I, but they also provide service in the same corridor that will eventually be served by Dulles Metrorail (or the Silver Line). These services will be coordinated with Metrorail expansion to feed the Metrorail stations in later phases of the plan, but they also help to build transit ridership in advance of Metrorail expansion.

Commuter Routes

All of the existing commuter routes were tested and recommended to continue in Phase I of the transit plan, as well as four new commuter routes. Additional commuter routes that appear successful in Phase I include a long-haul commuter route from a recommended new park and ride lot in the vicinity of Route 28 and Route 7 (a lot purchased by the County called **Ashburn North**). Three additional routes address congestion and through-traffic in the western part of Loudoun County that need to be linked to both Loudoun destinations and points east: a new "**Cross-County Commuter**" route serving the western Route 7 corridor with transit transfer points in Leesburg and Dulles North Transit Center; and new routes originating near the state line with West Virginia on **Route 9** and Maryland on **Route 15**. All three of these routes would require new park and ride lots that are not currently funded nor are sites identified. The latter two routes, particularly Route 9, are not as strong in performance measures but are recommended due to the high levels of traffic congestion occurring and forecast to occur on these routes. The Route 15 route would serve a park and ride on the north side of Leesburg in addition to one further north, ideally at least as far north as Lucketts in order to have some impact on congestion along Route 15. Route 9 and Route 15 are congested and are forecast to be more congested in the future. The policy of the rural portion of the county is to maintain the two-lane capacity of these roads with operational improvements and travel demand management strategies including commuter bus service.

The origin-destination analysis prepared for the 2010 CTP indicated that much of the traffic entering Loudoun County from the west and north is destined for eastern Loudoun County and Fairfax County employment centers. Based on this information and to maintain a balance of route destinations, the Cross-County and Route 9 service would have the Fairfax County stops that new Express routes follow, and the Route 15 service would have the Rosslyn, Pentagon and Washington, D.C. stops as do the current commuter services. All of these western routes would stop at Dulles North Transit Center to offload passengers with Loudoun destinations and to fill up with riders continuing to the eastern destinations.



Table 3-2: Loudoun County Transit Route Recommendations by Phase

| Route | Existing | Phase I | Phase II | Phase III |
|---|----------|---|--|--|
| Local Routes | | | | |
| Purcellville Connector | ✓ | ✓ | ✓ | ✓ |
| 7 to 7 on 7 | ✓ | Streamline and extend service hours | ✓ | ✓ |
| Ashburn Village Connector | ✓ | Modify route | ✓ | ✓ |
| Ashburn Farm Shuttle | ✓ | Modify service plan | ✓ | ✓ |
| Ashburn Farm Connector | ✓ | Discontinue – see Check Point service under Demand Responsive Transit | | |
| Sterling Circulator | ✓ | Modify from existing Sterling/Countryside route | ✓ | ✓ |
| Dulles 2 Dulles | ✓ | Discontinue when Atlantic Circulator and Rt 28 Routes implemented | | |
| Loudoun County Parkway Circulator* | | ✓ | Extend to Wiehle Ave Metrorail | End at Rt 772 Metrorail |
| Atlantic Circulator | | ✓ | Extend to Wiehle Ave Metrorail | End at Rt 606 Metrorail |
| Pacific Circulator* | | | ✓ | End at Rt 606 Metrorail |
| Dulles South Circulator | | | ✓ | ✓ |
| Inter-County Route | | | | |
| Route 28 to Manassas | | ✓ | ✓ | (Move airport stop to Rt 28 Metrorail Station) |
| Express Routes | | | | |
| Sterling/Potomac to Fairfax | | ✓ | End at Wiehle Ave Metrorail | End at Herndon Metrorail |
| Dulles North to Fairfax | | ✓ | End at Wiehle Ave Metrorail | Replaced by Metrorail service |
| Dulles Town Center to Fairfax | | ✓ | End at Wiehle Ave Metrorail | Replaced by Metrorail + Atlantic Circulator |
| Cascades | ✓ | Ends at West Falls Church Metrorail | End at Wiehle Ave Metrorail | End at Herndon/Monroe Metrorail |
| Commuter Routes | | | | |
| Purcellville | ✓ | ✓ | ✓ | ✓ |
| Hamilton | ✓ | ✓ | ✓ | ✓ |
| Leesburg | ✓ | ✓ | ✓ | ✓ |
| Dulles North | ✓ | ✓ | ✓ | ✓ |
| Dulles South | ✓ | ✓ | ✓ | Add Route 50/606 Park and Ride |
| Reverse Commute | ✓ | ✓ | Phase out as local routes become available | |
| Ashburn North Commuter | | ✓ | ✓ | ✓ |
| Route 15 North to DC (with stops at Leesburg North and Dulles North Transit Center)** | | ✓ | ✓ | ✓ |



| Route | Existing | Phase I | Phase II | Phase III |
|---|----------|-----------------------------|-----------------------------|----------------------------|
| Route 9 Connector (with stops in Leesburg and Dulles North Transit Center)** | | Route goes to Tysons Corner | End at Wiehle Ave Metrorail | End at Route 606 Metrorail |
| Cross-County Connector (with stops in Leesburg and Dulles North Transit Center)** | | Route goes to Tysons Corner | End at Wiehle Ave Metrorail | End at Route 606 Metrorail |
| Lansdowne Commuter** | | | | ✓ |
| One Loudoun Commuter** | | | | ✓ |

* Route depends on completion of planned sections of roadway

** Route depends on establishment of park and ride facilities not currently planned or funded

B. Transit Plan Phase II

Phase II corresponds to the introduction of Metrorail service serving Tysons Corner and Reston, with the westernmost station at Wiehle Avenue. The alternatives analysis modeling was done for the year 2015, reflecting anticipated levels of land use that will be in place mid-way or near the end of Phase II. Current projections for opening of this portion of the Dulles Metrorail are 2012-2013.

Two new routes are introduced in Phase II, the **Pacific Circulator**, which would be coordinated with the completion of Pacific Boulevard on the west side of Route 28, and the **Loudoun County Parkway Circulator**, connecting Metrorail to the employment centers and transfer points along Loudoun County Parkway from the Dulles Greenway to Route 7. Route modifications in Phase II include ending the Express routes at the Wiehle Avenue Metrorail station. Also, the Atlantic, Pacific and Loudoun County Parkway circulators would include service to the Wiehle Avenue Metrorail station in order to provide reverse-commute connections.

C. Transit Plan Phase III

Phase III begins when the Dulles Metrorail is completed to Route 772 (Ryan Road) in the Ashburn Area. In this phase, local reverse-commute routes including the Atlantic and Pacific Circulators and the Loudoun County Parkway Circulator would be re-oriented to Loudoun County Metrorail stations. Atlantic and Pacific Circulators would be re-oriented to the Route 606 Metrorail station, which is the current location of the Dulles North Transit Center– this area will continue to serve as an important transfer point for the cross-county commuter routes originating on Routes 7, 9 and 15 in western Loudoun. The Loudoun County Parkway Circulator would terminate at the Route 772 station. At this point, the **Dulles South Circulator** connecting the Arcola area to the Route 606 Metrorail Station also would be implemented. Among the Express routes, those that follow the Dulles Greenway from Loudoun to Fairfax would be eliminated and replaced with the local circulator routes as described above. The two Express Service routes that serve Potomac/Herndon would continue in Phase III but would terminate at the Herndon/Monroe Metrorail station. Also, a restructuring of the fares and timetables of routes that would be shortened in Phase III would need to be considered based on passenger characteristics, as the balance of the routes' functions as local circulator and commuter connection could shift in Phase III.

For long-haul commuter routes, two alternatives were considered for Phase III. The options are based on the financial expectation that, per current agreements, the source of county subsidies for commuter bus (the county gasoline tax) would be dedicated to paying into the Regional Compact to support Metrorail. However, market research and travel modeling both suggest that the long-haul commuter market is a distinct market that would not be served as effectively by Dulles Metrorail due to travel times and required transfers. The two options therefore are to continue the long-haul service at higher fares that would fully cover the cost of the service and eliminate the need for a subsidy. The second option is to convert the routes to in-county feeder services linking county park and ride lots to Metrorail stations. Evaluation of both options was strongly advocated by the TPAC, based on their desire to fully understand whether the commuter routes serve a distinct market and whether this service could sustain itself financially.



The park and ride analysis shows that additional demand for park and ride spaces will be generated by county growth to 2030. Therefore, additional commuter services are added to link these lots to either Metrorail or directly to the Washington, D.C. area in Phase III. The proposed locations for these services are in the vicinity of **Lansdowne** and **One Loudoun**. A new lot in the vicinity of Routes 50 and 606 would also be added to the Dulles South commuter service in this phase.

Phase III Alternatives

The Phase III analysis demonstrates that the market for the long-haul commuter bus service is distinct from the market for Metrorail, while at the same time is not very sensitive to price. Specifically:

- The travel demand model forecasts a marginal decrease (2 percent) in bus ridership if the fare in 2030 is increased from \$5 to \$12 (in 2005 dollars) on routes traveling all the way to downtown Washington, D.C. This is based on modeling these routes all the way to D.C. in Phase III with all other Phase III services, with the only variation in the model scenarios being the difference in fare on commuter routes.
- Comparing the two Phase III scenarios in which the commuter routes are integrated with Metrorail service versus providing commuter service all the way to Washington, D.C., Metrorail ridership is changed by less than two percent. Thus, it appears that even at a self-sustaining fare, the commuter bus service to Washington, D.C. would attract large numbers of riders without detracting from the Metrorail ridership.
- The option that results in the most overall transit ridership (including Metrorail) in Loudoun County is the scenario with commuter bus service routed as it is today and with a higher fare that covers system costs.

It is important that the commuter bus service does not in any way detract from the Metrorail ridership because the county's transit subsidy funding source, the gasoline tax, will be committed to cover the county's share of Metrorail costs once Metrorail service comes to Loudoun County. Based on these conclusions, the self-sustaining fare option is recommended for commuter bus service in Phase III.

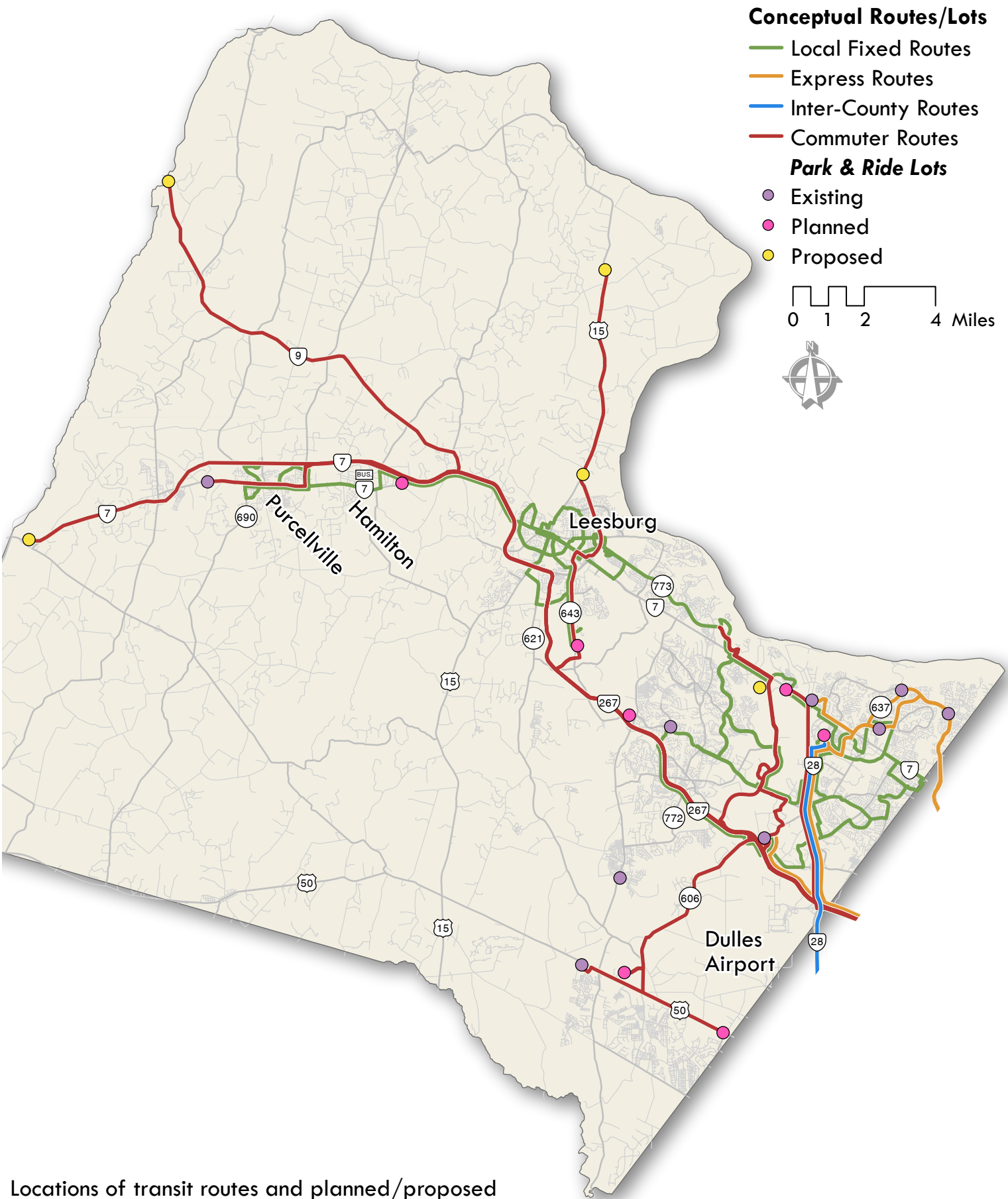
D. Additional Findings for Bus Service

Several important conclusions arise from the analysis and recommendation of routes by phase discussed above. These issues are addressed in the following paragraphs. The resulting policy recommendations for bus services for the Countywide Transportation Plan were presented earlier in this chapter.

Transfer Points

The plan assumes that certain areas will become key transfer points in the system beginning in Phase I – particularly Dulles Town Center and the Dulles North Transit Center (which in Phase III becomes the Route 606 Metrorail station). Capacity at the park and ride lot at Dulles North Transit Center is limited to the 750 spaces currently available. However, the plan shows a shifting of the role of this transfer center from strictly park and ride for commuter services to a transfer point from commuter routes serving western Loudoun to local circulator routes accessing major employment centers along the Route 28 corridor (i.e., the Atlantic Circulator in Phase I). The passengers departing at this location will free up seats on the buses from western Loudoun so that boarding passengers at Dulles North Transit Center can ride to the Fairfax or Washington, D.C. destinations of the routes. Thus, while the direct ridership on the Dulles North commuter route is relatively low in Phase I, in effect, the other routes serving this transfer point (Cross-County Commuter, Route 9 Commuter, and Route 15 Commuter) would afford opportunities for additional passengers to board at Dulles North Transit Center. Both Dulles North Transit Center and Dulles Town Center also host new Express Route service, and these services will further increase the demand for parking spaces. It appears from the analysis that the 750 spaces (which would support 750 round-trips per day or 1,500 daily boardings across routes) will be adequate, and that approximately 300 to 400 spaces should be developed at the Dulles Town Center location. As the Urban Center designated for this area develops, the County will re-evaluate parking needs.

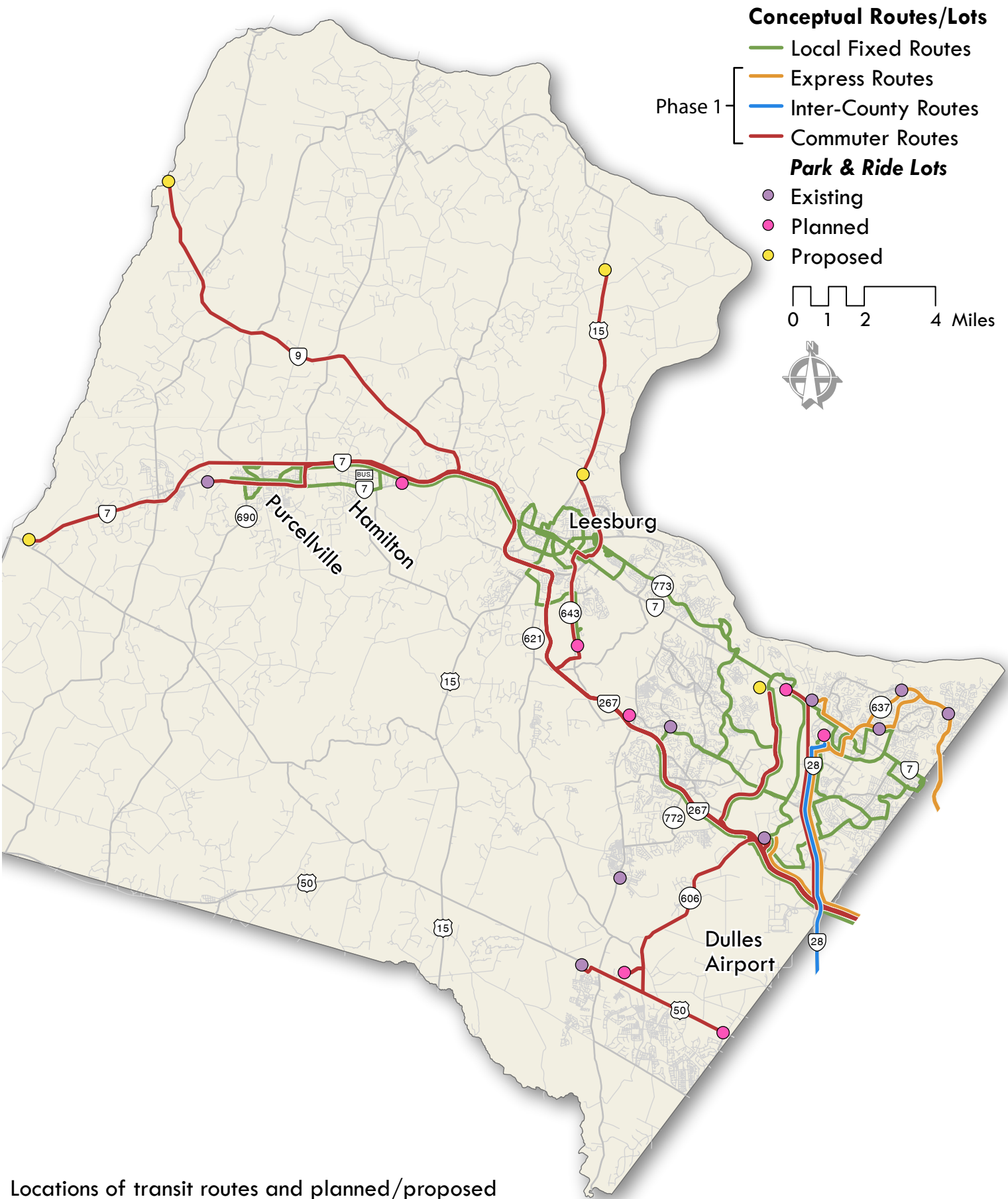
Loudoun County Transit Plan | Phase I - Prior to Metrorail Extension



Locations of transit routes and planned/proposed park-and-ride lots are conceptual only

Figure 3 - 1a

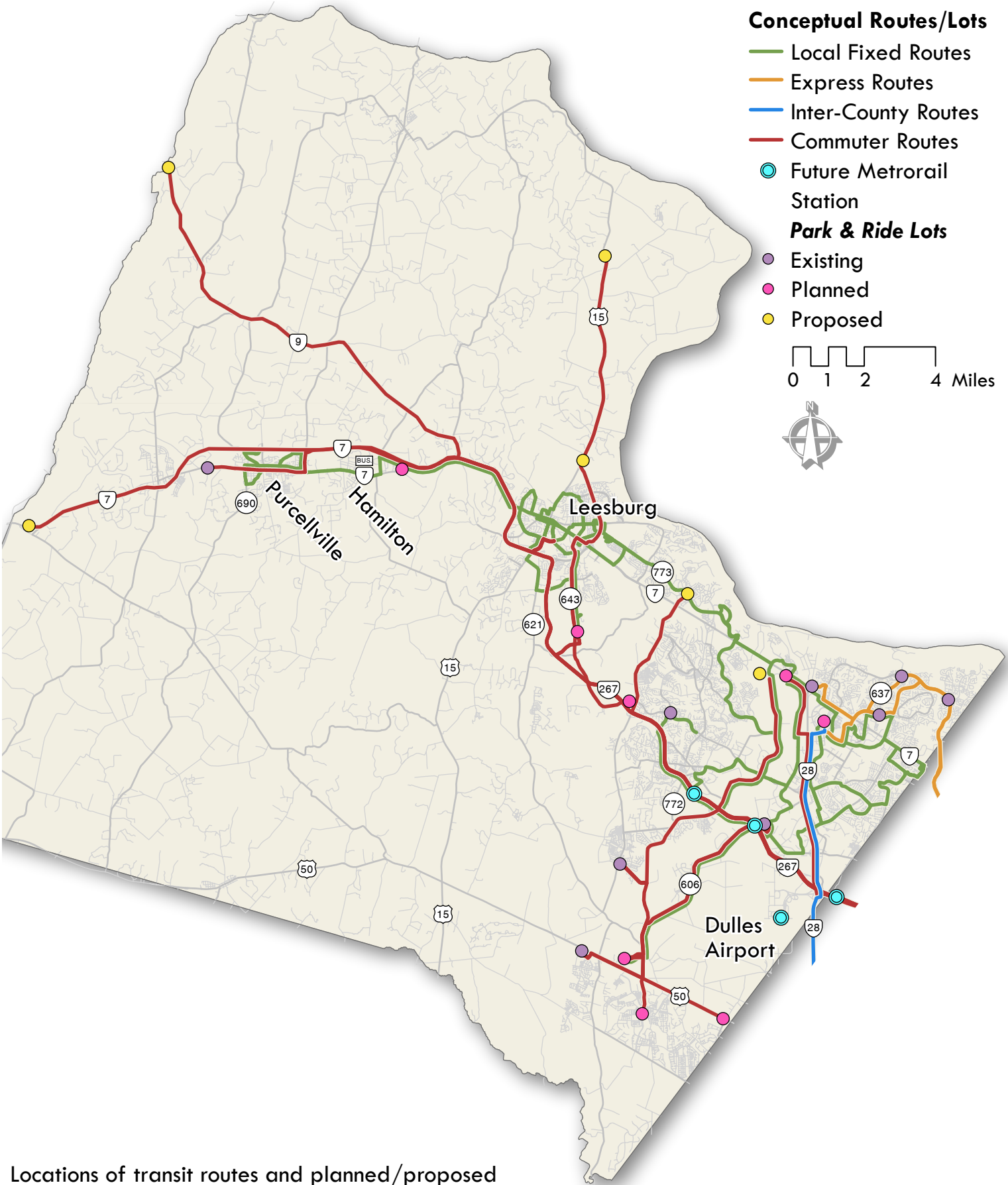
Loudoun County Transit Plan | Phase II – Metrorail to Wiehle Ave (Reston)



Locations of transit routes and planned/proposed park-and-ride lots are conceptual only

Figure 3 - 1b

Loudoun County Transit Plan | Phase III – Metrorail to Route 772 (Moorefield Station)



Locations of transit routes and planned/proposed park-and-ride lots are conceptual only

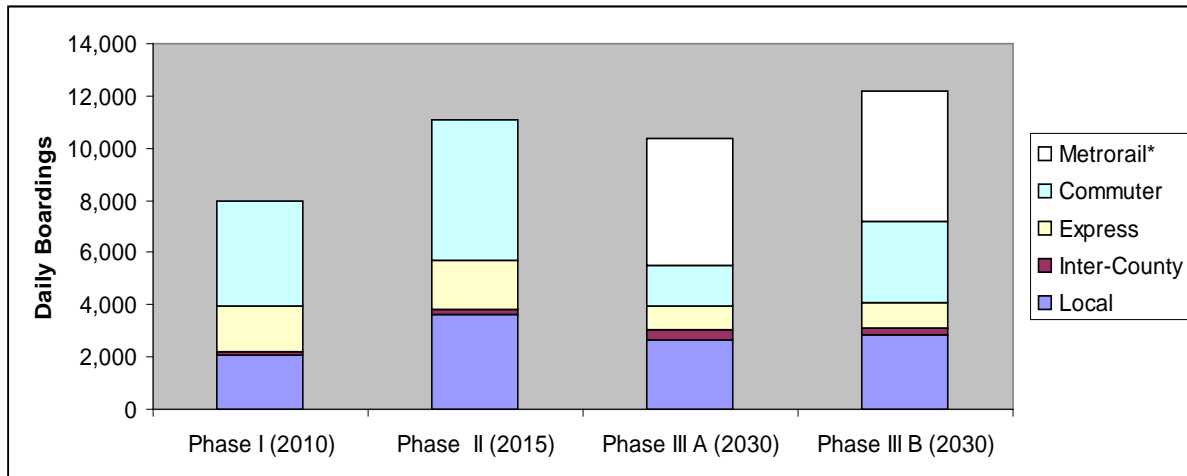
Figure 3 - 1c



Ridership Trends

As shown in Figure 3-2 and Table 3-3, ridership increases from Phase I to Phase II and from Phase II to the Phase III alternative with self-sustaining fares on commuter bus service. The demand for bus service peaks in Phase II, with several thousand passengers switching to Metrorail in Phase III. With the Phase III alternative that maintains commuter bus routes at a self-sustaining fare, transit ridership is projected to grow to a total of over 12,000 boardings per day with approximately 5,000 boardings onto Metrorail and 7,000 on buses.

Figure 3-2: Trends in Forecast Transit Ridership in Loudoun County



* Ridership from Metrorail Stations in Loudoun County plus Route 28

Phase III A includes commuter services ended at Metrorail Stations in most cases

Phase III B includes commuter services to Washington, DC with higher fares

From Phase I to Phase II, the increase in ridership is spread across most of the routes, but those with sharp increases include those from western Loudoun County and the local routes that would be extended to the Wiehle Avenue Metrorail station in Reston (i.e., Atlantic Circulator). At the same time, the express routes that in Phase I provided the only service to Reston and Tysons Corner appear to lose ridership in Phase II to the local routes that offer this connection by linking to Metrorail.

Table 3-3: Daily Transit Boardings by Phase

| | Phase I (2010) | Phase II (2015) | Phase III A (2030) | Phase III B (2030) |
|---------------------|----------------|-----------------|--------------------|--------------------|
| Local | 2,050 | 3,650 | 2,680 | 2,850 |
| Inter-County | 180 | 180 | 400 | 300 |
| Express | 1,750 | 1,850 | 900 | 950 |
| Commuter | 4,050 | 5,350 | 1,500 | 3,150 |
| Metrorail* | 0 | 0 | 4,900 | 4,980 |
| Total | 8,030 | 11,030 | 10,380 | 12,230 |

* Ridership from Metrorail Stations in Loudoun County plus Route 28

Phase III A includes commuter services integrated with Metrorail Stations

Phase III B includes commuter services to Washington, D.C. with higher, self-sustaining fares

One possible reason for the sharp increase in the ridership of western Loudoun commuter routes in Phase II (Cross-County, Route 9 and Route 15) is the projected increases in congestion. Several bottlenecks in the County would



not be addressed with roadway improvements by 2015 and the increased travel times could attract more riders to transit. In Phase III, by 2030 these same routes are projected to have lower ridership, which may in part be due to roadway improvements that are anticipated to address bottlenecks by 2030 such as the planned widening of Route 7 between Route 9 and Leesburg and added capacity on the Leesburg bypass.

The differences between the Phase III alternatives are discussed in detail below, but one important finding is that some portion of the commuter bus ridership (at least 2,000 riders based on the difference from Phase II to Phase III) would switch to Metrorail regardless of what is done with commuter routes in terms of fares and routing. Another portion of the Metrorail ridership comes from the express bus routes that are eliminated in Phase III, as the express bus riders along the Dulles corridor would have better service to the same destinations via Metrorail. The remainder of the Metrorail ridership is generated by land use in the corridor and, to a lesser extent, Loudoun residents who appear to choose local circulator bus routes that travel to the Wiehle Avenue station in Phase II but who choose to walk or drive to Loudoun Metrorail stations in Phase III. The latter conclusion is inferred from the reduced ridership on the local circulator routes that access Metrorail at Route 772 and Route 606 in Phase III.

E. Infrastructure

1. Park and Ride Lots

Park and ride lots are important to a multi-modal transportation system. They provide space for commuters to park their cars for the day to either join others in a carpool or to use public transportation that originates from the lot. Park and ride lots help reduce traffic congestion and pollution and assist the region in meeting Clean Air Act requirements. When transportation costs such as fuel or tolls increase, park and ride lots provide an effective means for residents to manage those costs through either transit or ridesharing. Properly located, a park and ride lot can also function as a short-term interim use prior to development of a site. A park and ride lot next to a future transit stop may reserve land that could later be used for more intense development to help ensure the long-term viability of the transit station. This may be appropriate in the designated Urban Center proposed in the *Revised General Plan*. Regional park and ride lots will not be located within the Inner Core of the Transit-Oriented Development.

The County currently operates a system of leased and donated park and ride spaces. These spaces are located at churches, shopping centers or vacant businesses with excess parking spaces. The County is currently designing and building its first county-owned park and ride lot on a site off of Sycolin Road in Leesburg. This 690-space lot anticipated to be completed by January 2010, will be served by the Loudoun County Transit commuter bus service. It will include bike lockers, bus shelters and waste receptacles. Additional park and ride lots should be developed at strategic locations to maintain a supply of park and ride spaces in proportion to the county population. Some park and ride locations will be focused on removing cars from the roadways at strategic locations, such as the western end of the congested Route 9 corridor. Other lots should fill gaps in the geographic distribution of park and ride lots so that users can minimize their trip distances, for example by adding more lots in the Route 7 corridor between Leesburg and Route 28.

The design of park and ride lots is to be consistent with the County's goal for a high-quality, pedestrian-friendly, and environmentally-sensitive setting. Park and ride lots are to be located near major arterial and collector roads. Lots will be linked to surrounding neighborhoods by sidewalks and bicycle facilities. Adequate lighting provides for the safety of commuters and landscaping ensures attractiveness and environmental sensitivity.

Park and ride lot utilization is strong and, during peak gasoline prices in 2008, some lots including Dulles North Transit Center experienced demand in excess of the supply of park and ride spaces. Several park and ride lots are already under development in Loudoun County, some through proffers and one central lot in the Leesburg area that will greatly expand park and ride capacity in that area. Table 3-4 shows the park and ride lots and capacity recommended for the period through 2030, including those lots that are already under development. There are also smaller, neighborhood/community lots that are not served by transit listed on the County's website. For more information on these lots, go to www.loudoun.gov/transportation.



The long-term need for park and ride spaces was developed based on a general ratio of the existing park and ride lots to existing population, and applying this ratio to the forecast 2030 population. On this basis, approximately 2,400 additional park and ride spaces should be added by 2030. This analysis does not take into account the expansion of commuter parking for Metrorail, as that is a new service that will generate demand not reflected in the current supply of park and ride lots in the county. The analysis assumes that a similar rate of park and ride lots distributed throughout the county will be needed to serve travel demand management strategies, including both transit and carpooling, in the future. Proposed park and ride locations were selected based on distributing new capacity near high-volume transportation corridors where population growth is forecast to occur in the county. In the future, a more sophisticated analysis could be prepared using GIS modeling to optimize the location and sizing of park and ride lots. However, a greater issue in implementation will be the identification and acquisition of land by the county or the incorporation of park and ride spaces in proposed development sites through negotiation with developers. The best outcome for travel demand management is to locate park and ride lots where trip purposes can be combined, such as retail or commercial areas including shops, daycare and other services used by commuters. The proposed park and ride locations are shown on the transit plan maps but are not intended to indicate precise locations.

During plan development, several issues related to park and ride lots were raised by citizens, the TPAC and the consultant team. Citizens and the TPAC indicated concern about the safety and security of park and ride lots, including security of parked cars during the day, security of cars parked overnight due to business travel, and personal security related to the lack of lighting in the lots. At the same time, the issue of parking fees was raised as a policy to encourage walk-to-transit rather than drive-to-transit behavior. Several of the transit recommendations, including expansion of service hours and linkages between local and commuter routes, are designed to facilitate walk-to-transit ridership. This would make route scheduling more complex, but could be managed through the use of route scheduling software. If parking fees were implemented, this would provide a funding stream for the attendants, lighting and security for the lots. These recommendations would prove challenging in a suburban and rural environment where driving to parking lots is faster and more convenient for riders, but as development densities increase, particularly with the advent of Metrorail in Loudoun County, these recommendations may become feasible in the transit nodes within the county.

Table 3-4: Recommended Park and Ride Lot Locations and Capacities

| Park and Ride Lot | Location | Commuter Route Serving the Lot | Status | Number of Spaces |
|-----------------------------|---|--|---------------|-------------------------|
| Purcellville (2 lots) | Franklin Park/St. Andrew's Church | Purcellville | Existing | 220 |
| Stone Ridge | Village Center Plaza, Aldie | Dulles South | Existing | 250 |
| Dulles North Transit Center | Route 606 and Route 634 | Dulles North Transit Center, plus recommended new routes (Cross-County Commuter, Route 9 and Route 15) | Existing | 750 |
| Cascades | Palisade Parkway & Community Lutheran Church | Cascades | Existing | 55 |
| Broad Run Farms | Galilee Methodist Church | Cascades | Existing | 48 |
| Algonkian | Cascades Parkway – Our Lady of Hope Catholic Church | Cascades | Existing | 100 |
| Lowes Island | Great Falls Plaza | Cascades | Existing | 65 |
| Ashburn North | Russell Branch Parkway east of Richfield | Ashburn North | Existing | 190 |



| Park and Ride Lot | Location | Commuter Route Serving the Lot | Status | Number of Spaces |
|--------------------------|---|--|--|-------------------------|
| Brambleton | Loudoun County Parkway and Creighton Road | Dulles South (future) | Existing/Proffered | 100 |
| Hamilton* | E. Colonial Highway Hamilton | Purcellville, Hamilton | County owned (opening spring 2011) | 250* |
| Leesburg* | Sycolin Road | Leesburg (plus routes that stop in Leesburg) | County owned (opening January 2010) (365 existing at Barber and Ross till move to permanent lot) | 690* |
| Goose Creek Village | Sycolin Road and Route 659 | Leesburg | Proffered | 100 |
| Arcola Center | Route 50 | Dulles South | Proffered | 200 |
| Dulles Town Center | Dulles Town Center | Dulles Town Center Express Service | Proffered | 100 |
| New, Phase III | East of Loudoun County Pkwy and Rt. 50 | Route 50/606 | Planned Route 50 East lot | 250 |
| New, Phase I | West of Round Hill (“Gateway”) | Cross-County Commuter | No site identified | 250 |
| New, Phase I | West of Hillsboro (“Gateway”) | Route 9 | No site identified | 175 |
| New, Phase I | North of Lucketts (“Gateway”) | Route 15 | No site identified | 100 |
| New, Phase I | North of Leesburg | Leesburg and Route 15 | No site identified | 300 |
| New, Phase III | Rt. 659 North of Rt. 7 | Lansdowne | No site identified | 250 |
| New, Phase III | Russell Branch Pkwy and Loudoun County Pkwy | One Loudoun | No site identified | 250 |

* Leesburg and Hamilton lots in new locations under County ownership

Park and Ride Lot Policies

1. Park and ride lots in the towns and the Suburban Policy Area will be located along or at the intersection of arterial or major collector roads, near activity centers such as commercial or mixed-use centers, schools, or other destinations, at transit stops, or in other safe and secure locations that provide convenient access. They should be connected by sidewalks or shared pathways to enable carpoolers and pedestrians to walk to the lot. These park and ride lots should receive priority consideration for the installation of bicycle lockers and racks.
2. Park and ride lots may be co-located with other complimentary uses, such as recycle centers, churches, parks and retail development areas.
3. Park and ride lots will be designated to provide convenient and safe bus access either within or adjoining the lot. Boarding locations for all transit and shuttle services at or near park and ride lots should be designated and signed. Schedules, service and fare information should be posted at boarding locations. All such areas need to be evaluated for provision of seating and weather protection. The relevant provisions of the Americans with Disabilities Act need to be incorporated in lot layout and boarding area design.



4. Park and ride lots should be developed on the basis of residential growth; specifically, there should be one commuter park and ride space for every 30 new households approved for development. These spaces do not include parking for Metrorail stations, nor should this guideline be applied to development immediately adjacent to Metrorail stations. These spaces also do not include “Gateway” park and ride lots that are intended to intercept through-traffic and inbound commuters from adjacent counties. These “Gateway” lots are proposed along Route 7 near the Clarke County border, along Route 9 near the Jefferson County border and along Route 15 north of Lucketts.
5. Regional park and ride lots will not be located within the inner core of the Transit Oriented Development (TOD) where pedestrian and bicycle access is given priority.
6. The County will develop transportation demand management standards that will be used to reduce vehicle miles traveled. These will include reducing through-traffic by providing park and ride lots and commuter transit service near Loudoun’s borders on major routes, and requiring local street connectivity according to an index of street connectivity that will be required in traffic impact statements for large developments.

2. Bus Shelters and Signs

Supportive infrastructure for transit includes shelters, signs and Intelligent Transportation Systems (ITS) devices. Transit shelters should be provided at park and ride lots and transfer points; the amount of ridership on local routes generally does not warrant development of shelters throughout the system. Signs for transit stops are needed throughout the system and, if the county system undergoes a branding program, would need to be replaced system wide. Absent an all-over change, the signs should be replaced / upgraded on an ongoing basis as an annual expense, such as 10% per year if the signs are expected to last 10 years. With regard to ITS infrastructure, the current telecommunication services in place include schedule downloads to personal data devices, cell phone/text message notification of real-time delays in service, and a variety of notification services offered through the commuter transit website. Public input indicated that one addition to these services that is desired is internet-based route querying or route-building. There are a number of web applications available, such as Google Transit and the WMATA website that may provide an avenue for providing this service in the future. More extensive ITS infrastructure would include signage at stops detailing the minutes-to-arrival of buses. The latter is expected to be implemented at Metrorail stations, and for purposes of this plan, it is assumed that the County will not independently pursue these types of ITS services but will coordinate with Metrorail infrastructure in Phase III.

The County has recently developed standards for public and private bus shelters installed in Loudoun County. Developers are encouraged to follow this bus shelter standard when installing shelters along fixed bus routes in Loudoun. The purpose of the standards are to reflect consistency of transit related products throughout the County.

Principal passenger-loading areas should be provided with shelters to protect public transit patrons. Because the shelter can be expanded relatively easily at a later date, provided sufficient platform space is installed initially, it is not critical to provide a shelter that accommodates all anticipated passengers at the time of original construction. It is more important to install at least the minimum standard size the County has established for bus shelters. Accessories that should be provided with the shelter include lighting, benches, route information, and trash receptacles. The County will maintain bus shelters located in the public right-of-way. Maintenance of bus shelters on private property will be the responsibility of the property owner.

Bus Shelters and Amenities Standards

1. All park and ride facilities will be well lit and equipped with waste receptacles.
2. A large 16-foot long bus shelter will be required to serve transfer points, commuter bus stops and other locations where high boarding concentrations are anticipated. A smaller 12-foot long bus shelter may be provided in other locations.
3. Solar lighting will be provided inside bus shelters with both timer and motion detector options. Exceptions may be made when other sources of lighting are available, i.e., overhead street light.



-
4. Bus shelters that are erected on private property will be maintained by the property owner with the following guidelines: trash is to be removed at minimum twice a week, all graffiti to be removed immediately from shelter, landscaping, if applicable, will be kept neat surrounding the shelter, and lighting will be in working order.
 5. All frames, side panels, roof panels, hardware and accessories associated with the bus shelters on private property will be the responsibility of the property owner to guarantee repair and/or replacement of worn-out/defective parts.
 6. The County will supply appropriate schedules and/or brochures for placement in shelter display racks.

F. Transit and Infrastructure Cost Projections

1. Annual Service Cost Projections

Financial forecasts of the annual riders, fare revenues, and operating and bus capital costs for the three phases are presented in Table 3-5, with operating and capital expenses beginning at \$16.9 million in Phase I. For comparison, the FY 2008 operating and capital expenditures for transit totaled approximately \$7.2 million.

There are several points that should be considered when examining the projections.

- **The estimates of operating and bus capital costs and funding required are presented from the perspective of Loudoun County.** The projections include the total projected costs for the contracted services (express, inter-county, and commuter) in all three phases. However, the net costs of the services operated by VRT (local and demand response) are presented for Phases I and II because it is assumed that the current funding conditions continue and a large portion of VRT's costs are covered by funds it receives from DRPT and revenues earned by VRT. A conservative assumption is made that Loudoun County will be required to pay the full cost of VRT operations in the two Phase III scenarios.
- **The passenger projections are presented only for the bus services funded by Loudoun County.** The passenger projections do not include passengers that will ride the Dulles Metrorail when it is extended to Wiehle Avenue in Phase II and into Loudoun County in Phase III. The passenger projections are described in detail in Table 3-3.

**Table 3-5: Annual Service Cost Projections**

| Service | Operating and Bus Capital Costs | Passenger Revenues | Funding Required |
|---------------------------------------|---------------------------------------|-----------------------|--------------------|
| Phase I | | | |
| Local | \$1,825,000 | \$664,000 | \$1,161,000 |
| Express | \$3,294,000 | \$1,244,000 | \$2,050,000 |
| Inter-county | \$154,000 | \$139,000 | \$15,000 |
| Commuter | \$11,256,000 | \$7,179,000 | \$4,077,000 |
| Demand Response | \$427,000 | \$27,000 | \$400,000 |
| Total | \$16,956,000 | \$9,253,000 | \$7,703,000 |
| Phase II | | | |
| Local | \$3,707,000 | \$1,187,000 | \$2,520,000 |
| Express | \$2,250,000 | \$1,253,000 | \$997,000 |
| Inter-county | \$154,000 | \$140,000 | \$14,000 |
| Commuter | \$14,450,000 | \$9,761,000 | \$4,689,000 |
| Demand Response | \$534,000 | \$34,000 | \$500,000 |
| Total | \$21,095,000 | \$12,375,000 | \$8,720,000 |
| Phase III Self-Sustaining | | | |
| Local | \$3,999,000 | \$924,000 | \$3,075,000 |
| Express | \$1,253,000 | \$527,000 | \$726,000 |
| Inter-county | \$297,000 | \$231,000 | \$66,000 |
| Commuter | \$9,469,000 | \$9,470,000 | (\$1,000) |
| Demand Response | \$1,304,000 | \$38,000 | \$1,266,000 |
| Total | \$16,322,000 | \$11,190,000 | \$5,132,000 |
| Phase III Integrated Metrorail | | | |
| Local | \$3,999,000 | \$871,000 | \$3,128,000 |
| Express | \$1,788,000 | \$525,000 | \$1,263,000 |
| Inter-county | \$372,000 | \$307,000 | \$65,000 |
| Commuter | \$3,744,000 | \$1,186,000 | \$2,558,000 |
| Demand Response | \$1,304,000 | \$38,000 | \$1,266,000 |
| Total | \$11,207,000 | \$2,927,000 | \$8,280,000 |

Total funding required increases from \$7.7 million in Phase I to \$8.7 million in Phase II. The major reason for the rise in required funding is the increased local and commuter bus service provided.

A review of the projections for two Phase III scenarios provides some interesting results. An estimated fare of about \$11.60 — \$4.60 more than the current \$7.00 — must be charged to make the commuter services come close to



break-even operations, meaning no Loudoun County subsidy. This approach reduces the total funding required for the bus transit services to \$5.1 million (Self-Sustaining) compared to the \$8.7 million required in Phase II. The reduction is a result of both the elimination of commuter bus subsidy through the higher fare and an overall reduction in bus ridership as Metrorail attracts passengers in Loudoun County. If, alternatively, the commuter routes are cut back to become feeder routes to the rail services (Integrated Metrorail), the total required funding is modestly lower than in Phase II - \$440,000 less due to the lower Commuter service costs, offset by increases in all other service costs, particularly Local and Demand Response services.

The projections for the two Phase III scenarios suggest that Loudoun County should strongly consider continuing to operate its commuter service to Washington, D.C. after the rail service in Loudoun County opens. The rationale is that more passengers are carried at a lower funding requirement in the Self-Sustaining alternative. However, it should only do so if it charges a higher fare than is charged now.

2. Bus Maintenance Facilities Projections

The Loudoun County commuter bus contractor is responsible for leasing maintenance and storage space for the commuter buses. This contractor leases some maintenance, office and storage space at VRT's facility in Purcellville.

This arrangement has worked well: the commuter bus contractor leases space from VRT and VRT, in turn, uses this revenue to support the services it operates. This arrangement also has been beneficial to Loudoun County because its contractor did not have to locate, lease, and maintain its own facility. However, both operators are quickly outgrowing this facility.

Many local governments that operate bus service through a contractor construct their own bus maintenance facilities and then lease these facilities to their contractors. Fairfax County and the Potomac and Rappahannock Transportation Commission are examples of two local Virginia agencies that have used this approach. It offers three major benefits:

- **It encourages wider competition among contractors.** More contractors will participate in the bidding process if finding an operation base is removed as an obstacle.
- **It reduces deadhead costs as development occurs.** As the County becomes more developed, it will become harder to find a location that is suitable for bus operations. For example, this was a problem in Montgomery County where a contractor actually operated its buses from adjoining Prince Georges County because it could not find a cost-effective location in Montgomery County. If a location is secured now in Loudoun County, the location can be used permanently into the future.
- **It provides protection in case of contractor default.** If the current contractor defaults and cannot continue to operate service, one problem is finding a replacement contractor who can quickly find a suitable operating location in Loudoun County. If the County owns the facility (and vehicles are available), it can usually find a willing contractor to come in and operate service.

The County has dedicated land in Leesburg for a bus maintenance and storage facility. The estimated number of vehicles to support the Phase III High Fare scenario is 58 commuter buses and 9 express buses for a total of 67 buses.

It is recommended that the County continue its efforts to build a maintenance facility that can serve up to 100 vehicles. The degree of financial support that will be provided by DRPT is uncertain, but it is expected that the funding will cover at least 50 percent of the total cost. If funding is constrained, one solution is to phase the construction. However, regardless of how the facility may ultimately be funded and constructed, Loudoun County likely will receive significant benefits if it continues to pursue this course of action.



3. Park and Ride Lot Cost Projections

The proposed park and ride lots are located to serve major collection points for express and commuter riders. (See Table 3-4 on page 19.) Seven new lots are proposed for Phase I in addition to two relocated lots in Hamilton and Leesburg. Three of the seven new lots have already been located. Two of the three additional lots proposed for Phase III are intended for sites not yet identified.

The estimated total cost for the park-and ride program is \$17.3 million for improvements, plus land; \$9.1 million for the Phase I lots not yet budgeted or negotiated and \$8.2 million for the Phase III lots. The estimated costs represent site preparation costs; land acquisition costs will also be needed in instances where the site cannot be proffered, such as the three western “Gateway” lots (Route 15, Route 9 and Route 7) proposed in Phase I. The estimated costs are based on research on park and ride programs developed in recent years in Fairfax County and along a Bus Rapid Transit project in the Pittsburgh, Pennsylvania region, as well as recent costs incurred by Loudoun County for the 690-space Leesburg Park and Ride lot.⁴ Based on these construction programs, as adjusted for inflation, the average cost per space is estimated at \$11,000. The available data indicate that the actual costs can vary substantially (ranging from \$7,000 to \$20,000 in 2009 dollars). Table 3-6 summarizes estimated costs for park and ride lots in Loudoun County.

Table 3-6: Park and Ride Costs

| | New Lots | Number of Spaces | Estimated Cost |
|-----------|-----------------------------------|-------------------------|---------------------------------|
| Phase I | 6 proffered or under construction | 1,440 additional spaces | No additional costs anticipated |
| Phase I | 1 proposed North of Leesburg | 300 | \$3.3 million plus land |
| Phase I | 3 proposed “Gateway” lots | 525 | \$5.8 million plus land |
| Phase III | 3 | 750 | \$8.2 million plus land |

Note that the capacity recommended by Phase III may be needed in Phase II, so earlier development of Phase III lots should be considered.

IV. Additional TDM Modes and TDM Policies and Strategies

A. Ridesharing Services

Another commuting option available to citizens is sharing the ride by joining or forming a carpool or vanpool. A carpool is at least two people riding in the same vehicle to/from home or park and ride lots and work sites. A vanpool is at least seven people riding in a vehicle to/from home and work. Carpools and vanpools save commuters money by reducing their cost(s) of gasoline, parking, tolls, maintenance/repairs, and even insurance when they share a ride. The County is a member of Commuter Connections which provides a regional, online rideshare matching database of registered carpoolers and vanpoolers looking for new riders/drivers. Staff has the ability to provide citizens with potential commuter matches based on their origin and destination and work hours. The commuter match service is free.

A relatively new program to Loudoun County and the nation is NuRide. NuRide is a program that rewards people for carpooling or sharing the ride. NuRide is a private corporation that seeks sponsorship from retail businesses and corporations to provide carpoolers with reward miles that can be redeemed for items such as gift certificates, discounts on purchases and actual material items. Loudoun County government was instrumental in helping launch NuRide in 2003 and a good percentage of county government employees take advantage of the reward benefits.

⁴ Data were from 2003 program in Pittsburgh, 2005 and 2007 surface lots constructed in Fairfax County, and 2008-9 Leesburg park-and-ride lot construction by Loudoun County. A planning cost estimate from VDOT was researched and found to be substantially lower than observed costs; therefore the VDOT planning cost was not included in the estimation.



Through the VANSTART and VANSERVE programs, citizens may receive subsidies to either fund empty seats in their start-up vanpool or in one that is losing members and needs financial help to continue operating. These two programs are administered through the County with funding support from the Commonwealth of Virginia (DRPT). Both of these programs require the completion of forms and a tabulation of monthly expenses and passenger lists. The length and amount of subsidy given for each van varies based on the number of seats in the van and the number of vacant seats for each month requesting funding.

B. Employer Outreach

Employer Outreach involves a strategic effort to reduce the number of single occupancy vehicles driven to workplaces throughout Loudoun County. Outreach is mainly targeted at private companies with 100 or more employees working in Loudoun County, but companies of all sizes are eligible for employer outreach. This program is provided at no cost to the employer or employees. With the employment level anticipated to increase from about 130,000 employees in 2006 to almost 290,000 by 2025 this program will be even more important.

An employer services representative contacts employers and encourages the adoption or expansion of voluntary commuting programs such as transit, ridesharing, preferential parking for carpools and vanpools, bicycle riding, flexible work schedules and telework. Specific efforts offered to employers and their employees include commuter surveys, transportation fairs, transit benefits, Telework!VA, and the display of transportation options such as brochures and literature within the workplace.

The employer outreach program is supported and funded by the Metropolitan Washington Council of Governments, the Virginia Department of Transportation, the Virginia Department of Rail and Public Transportation and the local gasoline tax. As a member of Commuter Connections, Loudoun County Commuter Services garners the support of the Metropolitan Washington Council of Governments. This includes participation in programs such as the regional Bike to Work Day, the regional Rideshare database and the Guaranteed Ride Home program.

Outreach efforts are typically directed toward human resources and facilities personnel. The benefits of adopting alternative commuting programs include:

- improved employee morale;
- enhanced recruitment and retention;
- reduced tardiness and absenteeism;
- reduced needs for parking and office space;
- improved air quality;
- reduced traffic congestion; and
- overall improvement in the quality of life in Loudoun County.

Employer outreach tasks include: phone calls, emails, in-person meetings, transportation fairs, maintenance of a computerized sales contact database, production and distribution of a quarterly newsletter and other materials promoting alternative commuting.

C. Teleworking

Teleworking, also known as telecommuting, means using information technology and telecommunications to replace work-related travel. Simply put, it means working at home or closer to home. With teleworking, employees work at home or perhaps at a local telework center one or more days per week. Communication is accomplished by phone, email, fax, and teleconferencing. Nationwide, more than 20 million workers are going to work simply by picking up the phone and/or turning on their computers.



This workplace alternative pays real dividends for area businesses and their employees, while reducing traffic congestion and air pollution, increasing the area's economic vitality, and bolstering overall quality of life.

D. Biking and Walking

Walking and biking are affordable, clean and healthy forms of transportation. The *2010 CTP* supports the vision of the *Loudoun County Bicycle and Pedestrian Mobility Master Plan* with additional information, guidance and policies.

Transportation Demand Management Policies (associated with sections A - D)

1. The County will require Transportation Demand Management strategies for both residential and non-residential development. TDM strategies as listed in Table 3-7 will be required within transit corridors as part of the land development application process. The County will further develop transportation demand management (TDM) standards to be used by applicants to create TDM plans. These TDM standards will call for new and existing development to implement strategies that will ultimately reduce vehicle trips and vehicle miles traveled. Examples of such strategies include providing employment opportunities suitable to local residents and housing suitable to local workers, and connectivity of neighborhoods and retail/commercial areas.
2. The County will encourage existing and new employment and business uses to support alternative travel modes by offering ridesharing and car/vanpooling, minimizing the availability of parking beyond current County requirements, and providing site amenities (e.g., transit shelters, bicycle lockers and showers) as appropriate. Employers should also investigate other incentives (e.g., parking cash out programs and telework policies).
3. The County will reduce parking requirements when a development proposal includes Transportation Demand Management (TDM) strategies that can be demonstrated to reduce trip making to and from the development. Such strategies may include, but are not limited to: carpool and vanpool coordination, parking incentive programs, transit subsidies and teleworking programs. Parking reductions in such instances will be commensurate with the demonstrated reduced demand for parking.
4. To encourage the use of transit, in non-residential areas of transit nodes, the County will implement Transit-supportive parking policies and parking management strategies, which may include, but are not limited to, the following: reduced parking requirements, parking maximums, shared parking, and pricing.
5. The County will amend the Zoning Ordinance to include a trip-reduction ordinance for transit in designated transit corridors (Route 7, Route 50, Route 28, and the Dulles Greenway).
6. The County will consider credits based on the reduced need for transportation improvements attributable to estimates of trip reductions due to TDM strategies.
7. As a general principle, the funding of Transportation Demand Management strategies from the County's trust fund will be applied to projects that serve and support the transportation system within the geographic Policy Area that made the contributions. The funds identified for any particular strategy will be expended either when the total amount needed is accumulated, when the amount accumulated is sufficient for an acceptable, partial improvement, or when the amount accumulated can be used to acquire "matching" funds from another source which, when combined, equal the total amount necessary to fulfill the strategy.



Transportation Demand Management Strategies (associated with sections A - D)

Table 3-7 includes typical strategies that can be used to achieve the minimum 10 percent mode split required for land development applications within the transit corridors.

**Table 3-7: Transportation Demand Management (TDM) Strategies
for Land Development Applications**

| TDM Strategies for Land Development Applications | |
|--|---|
| <u>Bike-Related Strategies:</u> Bicycle Path Network Bike Racks and Bike Lockers Bicycle and Pedestrian Amenities (showers and lockers, etc.) | <u>Rideshare Strategies</u> On-Site Rideshare/Transit Information Rideshare Rewards Sponsorship (NuRide) |
| <u>Transit-Related Strategies:</u> Transit related design elements: (Bus Lanes, Bus Ways and Bus Bays, etc.) Bus Stops/Shelters Shuttle Bus Service Contributions Toward the Transit/Rideshare Trust Fund | <u>Infrastructure Strategies</u> Park and Ride Lots Preferred HOV Parking Pedestrian-friendly Design |
| <u>Additional TDM Strategies</u> Teleworking Compressed Work Week Guaranteed Ride Home Flexible Work Hours Shared Car Programs (i.e., Zip Car) | |

The language below serves as a guide for implementing Transportation Demand Management (TDM) into existing and future business and employment sites in Loudoun County. Properties in Loudoun County which occupy 50,000 or more square feet of usable office space or include 100 or more tenants, employees, or contractors should initiate at a minimum the baseline TDM procedures below:

1. Identify an Employee Transportation Coordinator (ETC) from each tenant/employer to serve as the primary TDM contact with the County. ETCs will promote and encourage commuting alternatives in cooperation with other private and public TDM efforts or Transportation Management Associations.
2. Meet with County staff to clarify commuting options to the site.
3. Conduct initial and biennial employee commute surveys to benchmark and measure strides toward reducing vehicle trips and vehicle emissions.



-
4. Provide access to alternate commute information, including free carpool ridematching service, through on-site transportation fairs or similar efforts.
 5. Provide all new hires (full-time, part-time or contract) written information on alternate commute options and efforts toward congestion mitigation and compliance with air quality standards.
 6. Install and maintain permanent displays and/or “take one” racks for alternate commute information such as transit schedules, park and ride lot maps, rideshare information and incentives.

Additional measures may be added from the following list:

1. Provide a presence on the employer’s internet site detailing alternate modes of transportation and other travel reduction measures.
2. Implement flextime and compressed work schedules to decrease employee travel during peak hours.
3. Implement a formal telework program with a minimum participation level of 5 percent of eligible employees at the conclusion of the program’s first year.
4. Provide preferred, reserved parking for carpools and vanpools.
5. Provide secure, weather-protected bicycle storage or bicycle racks.
6. Provide lockers and showers for employees/tenants who walk or bicycle to and from work.
7. Promote participation in Bike to Work Day, Ozone Action Days and other clean commute events.
8. Contribute to financial incentives/rewards for ridesharing through programs such as NuRide.
9. Provide pre-tax and/or employer-sponsored transit benefits as allowed by Internal Revenue Code 132(f)(2)(A) to employees for transit and/or vanpools.
10. Provide shuttle service to nearest transit center/park and ride.
11. Supplement regional Guaranteed Ride Home program for tenants/employees.
12. Provide employee membership in a car-sharing program.
13. Provide lunch hours shuttle service twice per week.



Chapter 4

Bicycle and Pedestrian Facilities

Loudoun County aspires to be a place where pedestrians and bicyclists of all abilities have a safe, secure and convenient alternative transportation network of walkways and bikeways that enable everyone to move efficiently to and from such places as work, school, transit, shopping, libraries, parks and recreation sites. As such, planning for the bicyclist and pedestrian is integrated with the entire process of planning, design, and implementation by both the public and private sectors and effectively advocated within that process. Contained within this chapter are policies and recommendations to implement the County's vision for bicycle and pedestrian accommodations along CTP roads. Planning guidelines for the provision of these facilities along CTP roads are contained in Appendix 6: Bicycle and Pedestrian Facilities General Planning Guidelines. The information contained in the CTP with respect to bicycle and pedestrian facilities supplements the recommendations and guidelines that are specific to the facilities contained in the *Loudoun County Bicycle and Pedestrian Mobility Master Plan*. For location of bicycle and pedestrian facilities within Leesburg Town limits, refer to the Leesburg Town Plan, as amended.

I. Pedestrian Mobility

Pedestrian-friendly communities are a key component of an efficient multi-modal transportation system. Every trip starts with walking. Walking is an affordable, clean, and healthy form of transportation. The County has worked to improve provisions for pedestrians, including sidewalk networks, pedestrian-oriented intersection designs, and traffic calming measures to encourage pedestrian travel. While much progress has been made with respect to pedestrian accommodations, much still needs to be accomplished to ensure that walking is reliably a safe and convenient option.

The following obstacles to pedestrian travel remain in some areas:

- Difficulty crossing wide, heavily traveled arterial and collector streets;
- Lack of sidewalks or other designated walking areas along major roadways;
- Insufficient lighting at intersections and along highways;
- Difficulty crossing certain intersections and interchanges because of the lack of a pedestrian travelway or crossing signal, or because the signal timing does not enable pedestrians sufficient time to cross the streets;
- Sidewalks too close to high-speed traffic, discouraging pedestrian travel because of traffic noise and hazard perception;
- Drivers' general lack of awareness of pedestrians; and
- Lack of connections between subdivisions.

II. Bicycle Mobility

Loudoun County is fortunate to have the Washington & Old Dominion (W&OD) Trail and smaller recreational shared use path systems such as those in Cascades, Countryside, and Ashburn. As with pedestrian facilities, the County has worked to expand its network of bicycle accommodations to make bicycling a more viable form of transportation and an alternative to car transport. Through the land development review process in particular, the County has stressed the need for new shared use paths and



other bicycle accommodations, resulting in major growth in path mileage. In addition, the County looks for opportunities to add accommodations along roads built in the past without such facilities.

The County recognizes that one size does not fit all when it comes to the location and design of bicycle accommodations. Accommodations for bicyclists along roadways can take various forms, such as separated, shared use paths along the roadway, bike lanes, wide curb lanes and paved shoulders. Different traffic volumes, patterns, accident statistics and roadway designs, including number of entrances/exits onto the roadway, introduce unique safety considerations when considering facility types. Design constraints due to topography, including curvatures and lines of sight, presence of historic and natural resources, proximity to existing and planned facilities and available right-of-way also are factors in facility design. Furthermore, the needs of different user groups vary from experienced bicyclists that prefer bike lanes and wide-curb lanes to the less-experienced adult or child rider who finds off-road shared use paths more conducive to comfortable travel. The complete reliance on an off-road shared use path system is not possible due to costs and funding constraints and is not necessarily the safest or most desirable option. Within a suburban street setting, faster-moving bicyclists greatly increase their vulnerability at intersections by riding on the sidewalk or shared use path, because motor vehicle drivers often fail to notice bicyclists in crosswalks when making right- and left-turn movements. Most motor vehicle/bicycle accidents occur at intersections; motorists rear-ending bicyclists is rare. The physical characteristics of the network should take into consideration the various needs of different user groups and provide a blend of facility alternatives specific to Loudoun County's road network, community design, and topography.

III. Benefits of Pedestrian and Bicycle Mobility

As opportunities become available, the County will continue to strive to close gaps in the pedestrian and bicycle networks and work to realize the vision of the *Loudoun County Bicycle and Pedestrian Mobility Master Plan* and the greater vision of the multi-modal network as defined in the *2010 CTP*. As the County continues to improve pedestrian and bicycle mobility, numerous benefits are anticipated from the enhancement of these facilities and riding. These include:

- Enhanced quality of life for County citizens by providing access, connections, and increased mobility for bicycle travel throughout the county on an extensive network of shared use paths, bike lanes, wide curb lanes, shared lanes, paved shoulders, retrofitted intersections, and multi-modal connections.
- Improved mobility by increasing the opportunities for walking and biking to public transportation, employment, and other activity centers.
- A cleaner environment. Increased ridership helps to reduce the dependence on single-occupancy vehicle trips and aids the metropolitan region in improving its air quality.
- Expansion of the rural economy by providing the opportunity for visitors to experience the County's beauty through biking.
- Preservation of cultural and natural resource corridors for public enjoyment through the designation of shared use paths and interpretive signage.

*Pedestrian and Bicycle Facilities Policies for Roadways**

*Note: Refer to the *Loudoun County Bicycle and Pedestrian Mobility Master Plan* for the complete set of policies for all bicycle and pedestrian facilities.

1. Bicycle and pedestrian facilities, as described in this document, will be consistent with those identified in the *Loudoun County Bicycle and Pedestrian Mobility Master Plan*. The *Loudoun County Bicycle and Pedestrian Mobility Master Plan* identifies an existing and planned network of shared use paths, on-road bike lanes, wide curb lanes, paved shoulders, retrofitted intersections, pedestrian and bicycle over- and underpasses. These facilities will be planned for both existing and new neighborhoods as



part of the Community Plan Process and within each of the County's geographic policy areas.

2. Bicycle and pedestrian accommodations will be addressed as part of each stage of planning, design, and implementation, beginning with the scoping stage of all transportation projects. This full integration will reduce the cost of designing the facilities into a project at later stages of design and engineering and ensure that the needs of bicyclists and pedestrians are met.
3. Priority shall be given to providing bicycle and pedestrian accommodations and connections associated with arterial and collector roadways as identified within the *2010 CTP* and the *Loudoun County Bicycle and Pedestrian Mobility Master Plan* with emphasis on the completion of connections between existing facilities wherever it is deemed safe.
4. Bicycle and pedestrian facilities will be required with all secondary road projects in accordance with Appendix 6 and the *Loudoun County Bicycle and Pedestrian Mobility Master Plan* and will use secondary road dollars for these facilities.
5. Secondary roads will be retrofitted for bicycle and pedestrian facilities in accordance with Appendix 6 as part of maintenance and improvement projects such as road widening or repaving.
6. All land development applications shall apply level of service standards to provide adequate internal bicycle and pedestrian circulation systems and will demonstrate that they are safe, direct and barrier-free. These systems will also address connections to adjacent properties. The *Facilities Standards Manual* and Zoning Ordinance will be revised to provide additional guidance on acceptable bicycle and pedestrian circulation consistent with the *Loudoun County Bicycle and Pedestrian Mobility Master Plan*.
7. Bicycle and pedestrian accommodations will be provided as part of all new road and park-and-ride lot construction and reconstruction projects unless bicyclists and pedestrians are prohibited along the roadway.
8. To ensure the safety of bicyclists and motorists, all bicycle facilities will be designed in accordance with nationally accepted design standards and guidelines established by the Virginia Department of Transportation (VDOT), organizations and legislation, such as the American Association of State Highway and Transportation Officials (AASHTO) and the Americans with Disabilities Act (ADA), and the *Loudoun County Pedestrian and Bicycle Design Toolkit*.
9. The County will coordinate with each of the towns in further planning the countywide network of shared use paths and other bicycle and pedestrian accommodations paying close attention to the internal networks planned for each town.
10. Bicycling shall be encouraged through the provision of other amenities. The County shall develop bicycle parking policy and bike commuter facility standards for use throughout the County to ensure that adequate and appropriate bicycle parking and related amenities are located at places of employment, within shopping centers and districts, at transit centers and park and ride lots, at parks and schools, at public buildings, and at other appropriate public facilities. Bike racks and bike lockers may be funded through federal, state and local funding programs.
11. The County will establish priority bicycle and pedestrian routes and facilities along roadways as identified in the *Loudoun County Bicycle and Pedestrian Mobility Master Plan*.
12. Priority shared use paths not associated with specific roads as identified in Chapter 5 of the Revised General Plan shall be consistent with policies and guidelines for those facilities identified in the *Loudoun County Bicycle and Pedestrian Mobility Master Plan*.
13. Grade-separated crossings of the W&OD Trail are required for all roadway improvement projects at no cost to the Northern Virginia Regional Park Authority (NVRPA). The County will work with NVRPA



and adjacent land owners to provide connections to the W&OD Trail from existing or planned bicycle and pedestrian facilities.

14. Shared use paths will be planned and constructed in accordance with the Green Infrastructure policies of the *Revised General Plan*, the *2010 CTP*, and the *Loudoun County Bicycle and Pedestrian Mobility Master Plan* and coordinated with the shared use path plans of the towns.
15. Development proposals will be in conformance with the *Loudoun County Bicycle and Pedestrian Mobility Master Plan* and include provisions for bicycle and pedestrian accessibility within the development as well as connections with adjacent developments as called for in the Master Plan. Bicycle and pedestrian facilities along CTP roads will be provided at the commencement of a project, regardless of whether connections from adjacent properties are already in place.
16. The County will form a Citizen Bicycle and Pedestrian Advisory Committee, whose functions shall include those provided in the *Loudoun County Bicycle and Pedestrian Mobility Master Plan*.
17. The County will further support bicycling by encouraging transit operators to offer bike-on-bus racks and bike-on-rail accommodations.
18. The County Schools will be encouraged to promote bicycle safety and education in conjunction with information programs sponsored by the County Sheriff's Office, the Virginia Department of Motor Vehicles and a Citizen's Bicycle and Pedestrian Advisory Committee.
19. Bicycle and pedestrian access shall be incorporated on school sites as well as connections to nearby communities. The County will encourage the School Board to initiate a "Safe Routes to School" program designed to increase the number of students who can safely bicycle or walk to school. The County will coordinate with schools and other agencies such as VDOT to identify and prioritize areas for the "Safe Routes to School" program.
20. The County will work with schools and other agencies such as VDOT and the Sheriff's Department to institute the Level of Service elements identified in the *Loudoun County Bicycle and Pedestrian Mobility Master Plan* as they relate to schools for the creation of safe bike and walk routes around new and existing schools.
21. The County shall implement techniques and educational programs to increase awareness of other transportation modes using County roads.
22. The County will study the feasibility of the development of a dedicated bicycle route for the purpose of connecting various historic and cultural sites around the County.
23. The County will develop and maintain a map outlining all existing and proffered bicycle and pedestrian facilities to use as a guide for identifying gaps and priority improvement areas.



Chapter 5

Air Travel

In addition to roadways, transit service, and bicycle and pedestrian facilities, air travel is also an integral component of Loudoun County's overall transportation system. As with roadways and transit, recent growth has also resulted in increased demand for air travel. This chapter reviews the cooperation that has and continues to take place between Loudoun County and other agencies with respect to accessing airport facilities.

I. Air Transportation - Access to Airport Facilities

Washington Dulles International Airport and Leesburg Executive Airport are both important components of the multi-modal transportation system serving Loudoun County and the surrounding region. Both are to be supported with multi-modal and intelligent transportation systems that will provide for the safe, convenient, environmentally-sound and cost-effective movement of passengers and cargo.

A. Washington Dulles International Airport

Air travel at Dulles has grown tremendously in the past decade and is expected to continue its expansion including both domestic and international flights. Between 2000 and 2008, international passengers grew more than domestic passengers at Dulles. Dulles is the fourth busiest trans-Atlantic gateway to the United States from Europe. To accommodate anticipated growth, the Metropolitan Washington Airports Authority (MWAA) acquired additional acreage along the airport's western boundary and, in 2008, completed construction of a new (fourth) runway. Construction of an additional (fifth) runway is planned for the future.

MWAA is also taking the lead role in the extension of Metrorail to Dulles Airport and further into Loudoun County. The County is coordinating with MWAA and other agencies regarding the extension of Metrorail to Dulles as well as future road improvements around Dulles Airport, particularly in the Route 606 corridor. This coordination includes the location of future service entrances for ancillary facilities on airport property, including the planned Metrorail service and maintenance yard as well as planned and existing public safety training facilities.

B. Leesburg Executive Airport

The Leesburg Executive Airport, designated as a general aviation reliever airport in the National Plan of Integrated Airport Systems (NPIAS), provides capacity relief for the heavily congested airspace around Reagan-National and Dulles International Airports. Reliever airports are specifically designed to be high capacity airports that provide attractive alternatives to commercial service airports for pilots operating in metropolitan areas.

It is anticipated that the aircraft fleet mix at the Leesburg Executive Airport will continue the historical trend of a greater percentage of turboprops and turbojets with a gradually declining percentage of single and multi-engine piston-driven aircraft. The Airport is proposing a 500-foot runway extension to the south and acquisition of property to the west of the runway to provide the opportunity to construct additional corporate hangar facilities to handle the forecasted aviation demand.

Sycolin Road provides direct access to the Leesburg Executive Airport, including access to the general aviation terminal, fixed base operator hangar, Federal Aviation Administration (FAA) Automated Flight Service Station, and the fuel storage tanks. Connecting surface transportation access routes to Sycolin



Road and the Leesburg Executive Airport include the U.S. 15 Bypass, the Dulles Greenway, Route 7, Evergreen Mill Road, Tolbert Lane, Battlefield Parkway, and Crosstrail Boulevard.

Airport Access Policies

1. The County will have ongoing interaction with MWAA and the Leesburg Executive Airport on transportation-related issues of mutual interest.
2. In order to improve access to the airport and ancillary facilities located on airport property, the County will continue to interact with the Toll Road Investors Partnership (TRIP) II/the Dulles Greenway, MWAA, VDOT, Fairfax County and other agencies specifically regarding improvements to existing roadways (i.e., Routes 28, 50 and 606) around the perimeter of Dulles Airport.
3. The County will explore options to implement intelligent transportation systems technology and multi-modal networks to enhance airport access, particularly at Dulles Airport.
4. The County will continue to interact with the Town of Leesburg, VDOT, and other agencies regarding the re-alignment of Sycolin Road and other roads in the vicinity of Leesburg Executive Airport in order to accommodate planned improvements to airport facilities.
5. Sycolin Road will be constructed and traffic control devices installed, as appropriate, to allow safe turning movements into and from the Leesburg Executive Airport at the terminal entrance, Miller Drive, and the Airport fuel storage tanks.
6. The County will work in coordination with the other jurisdictions surrounding Dulles Airport to conduct a joint transit study based on planned land use to determine if a fixed guideway transit system is feasible along the Route 606, Route 28 and Route 50 corridors.



Chapter 6

Regional, State and Local Coordination

Transportation planning is a complex process, requiring coordination with decision-making bodies from all levels of government and often with the private sector. Loudoun County actively participates in transportation planning processes at the regional, state and local levels to ensure:

- Effective coordination among appropriate agencies/bodies
- Full compliance with State and Federal laws
- The ability to maximize State and Federal funding, and ultimately
- The provision of needed transportation facilities and services and implementation of the County's vision for transportation

The County coordinates with numerous agencies and institutions on transportation-related matters, including: the National Capital Region Transportation Planning Board (TPB), the Northern Virginia Transportation Commission (NVTC), the Northern Virginia Transportation Authority (NVTA), and the Virginia Department of Transportation (VDOT), among others. An overview of these agencies and relationships is provided in Figure 6-1. A more detailed discussion on the County's relationships with key partner agencies is included in the sections that follow.





I. Regional Transportation Coordination

As part of the Washington, D.C. metropolitan region, Loudoun County coordinates with various regional agencies in order to identify, plan for and implement priority transportation improvements and ensure concerns of a regional nature are addressed. Federal and state laws form the framework of these associations. The County works cooperatively with three such regional bodies on a regular basis. They include the National Capital Region Transportation Planning Board (TPB), the Northern Virginia Transportation Commission (NVTC) and the Northern Virginia Transportation Authority (NVTA). Each of these institutions has distinct roles and is discussed in the sections that follow.

A. The National Capital Region Transportation Planning Board (TPB)

The National Capital Region Transportation Planning Board (TPB) is the federally designated Metropolitan Planning Organization (MPO) for the entire Washington, D.C. metropolitan region. The TPB was established in 1965 in response to federal legislation that required urban areas to develop coordinated planning processes. The TPB plays an important role as the regional forum for transportation planning. MPOs prepare plans and programs that the federal government must approve in order for federal-aid transportation funds to flow to their regions. The TPB's primary activities are the development of a 20-year Financially Constrained Long-Range Plan (CLRP) and a six-year Regional Transportation Improvement Program (TIP). Members of the TPB include representatives of local governments; state transportation agencies; the Maryland and Virginia General Assemblies; the Washington Metropolitan Area Transit Authority (WMATA); and non-voting members from the Metropolitan Washington Airports Authority (MWAA) and federal agencies. Loudoun County currently holds one seat which is filled by a member of the Board of Supervisors. The County became actively involved with the TPB in the mid-1980s during the early stages of planning for future transportation improvements to include the Dulles Corridor Metrorail Project and the Dulles Toll Road, and later the Dulles Greenway. The TPB's activities are closely coordinated with the Metropolitan Washington Council of Government's (MWCOG) programs for forecasting population and employment for the region, and with the air quality planning activities of the Metropolitan Washington Air Quality Committee (MWAQC).

The CLRP responds to federal requirements that funding sources be identified for all strategies and projects included in long-range plans. Updated at least every three years, the CLRP includes only those projects and strategies that can be implemented over the planning period with funds that are "reasonably expected to be available." The TIP shows how portions of the CLRP will be implemented over the first six years of the planning period. Individual projects in the CLRP and TIP are often analyzed in more detail in corridor or sub-area studies. These studies are conducted by state and local agencies in cooperation with the TPB, and in accordance with federal procedures. Loudoun County projects must be on this six-year program in order to receive federal or state funding. Because the TPB places a project in the CLRP only after a funding source is identified, the placement of a project in the CLRP and TIP creates a high probability that the project will be constructed.

One reason for the strict criteria for project placement in the CLRP and TIP is that, under federal law, metropolitan areas must demonstrate that they comply with the Clean Air Act Amendments of 1990 and with a United States Environmental Protection Agency (USEPA) memorandum of March 1995 on the phased attainment process. The Washington, D.C. metropolitan region is currently designated as a non-attainment area for the federal health standards for ozone and fine particles. As such, the region has developed a State Implementation Plan (SIP) for the attainment of clean air standards and must demonstrate that planned transportation improvements are in conformance with the SIP. Each year, the CLRP and TIP are tested for air quality conformity. In recent years, conformity for specified pollutants has consistently been obtained by the region as called for in the SIP. Air Quality issues are further discussed in Chapter 7, Protection of the Environment.



B. The Northern Virginia Transportation Commission (NVTC)

The Northern Virginia Transportation Commission (NVTC) is responsible for coordinating public-transportation planning and funding in the Northern Virginia jurisdictions of Arlington County, Fairfax County, Loudoun County, the City of Alexandria, the City of Fairfax, and the City of Falls Church. Created by the Virginia General Assembly in 1964, NVTC consists of 20 commissioners. Thirteen commissioners are locally elected officials from the six member jurisdictions, six are from the General Assembly, and the final commissioner is a representative of the Virginia Secretary of Transportation. Loudoun County holds one of the 20 seats which is filled by a member of the Board of Supervisors. Loudoun County became actively involved with NVTC when it began collecting a 2% local gasoline tax in January, 1989. As part of its mission, NVTC receives and administers gasoline tax funds for member jurisdictions. Funds for projects selected for gasoline tax funding by the Board of Supervisors are released for these projects by NVTC upon request of the County. NVTC also advocates funding for public transit, provides oversight for Virginia Railway Express (VRE) and Washington Metropolitan Area Transit Authority (WMATA) services, and provides innovative transit services to the region, among other services.

C. The Northern Virginia Transportation Authority (NVTa)

Established in 2002 by the Virginia General Assembly, the Northern Virginia Transportation Authority (NVTa) is responsible for long-range transportation planning for regional transportation projects in Northern Virginia. Member jurisdictions include the Counties of Arlington, Fairfax, Loudoun and Prince William, and the Cities of Alexandria, Fairfax, Falls Church, Manassas, and Manassas Park. Loudoun County has been a member of the NVTa since its inception and holds one seat which by Code is filled by the Chairman of the Board of Supervisors. In accordance with its mission, as discussed in Chapter 2, NVTa was responsible for development of the TransAction 2030 Regional Transportation Plan, which identifies critical transportation projects requiring funding within the Northern Virginia region through the year 2030. Additionally, NVTa annually identifies priority projects for regional Congestion Mitigation and Air Quality Improvement (CMAQ) and Regional Surface Transportation Program (RSTP) funding each year.

Regional Transportation Coordination Policies

1. The County will continue to participate as a member of regional transportation planning agencies to increase the County's role and status in the regional planning arena and to generate support for transportation projects that are contained within the *2010 CTP*. Appendix One of the *2010 CTP* identifies recommended Countywide road improvements. The list of projects in this Appendix is intended to be a guide and will be updated on a regular basis through the County's transportation planning process in coordination with regional planning agencies, and by resolution of the Board of Supervisors.
2. The County will continue to work with other localities on specific issues of mutual regional concern, such as the Route 28 Highway Transportation Improvement District (HTID), and to provide support for appropriate regional transportation improvements outside the County.



II. State, County and Other Partnership Roles

Of equal importance to its coordination with regional agencies, the County must partner with state agencies to realize its vision for transportation. At the forefront of transportation issues for the state, The Commonwealth Transportation Board (CTB) is a governor-appointed 17-member body that establishes administrative policies for Virginia's transportation systems and allocates funding for highway projects, airports, seaports and public transportation. CTB-approved programs are administered through the various transportation-related state agencies, including the Virginia Department of Transportation (VDOT), the Virginia Department of Rail and Public Transportation (DRPT), the Port of Virginia, and the Virginia Department of Aviation. The County works especially closely with VDOT on a variety of transportation-related matters. This relationship is further detailed in the section that follows.

A. The Virginia Department of Transportation (VDOT)

The Virginia Department of Transportation (VDOT) is responsible for the maintenance and operation of all public roads in Loudoun County (excluding incorporated towns with populations greater than 3,500 people). Included with this responsibility is the provision of transportation improvement projects to ensure the continued mobility of Loudoun motorists. As discussed in Chapter 2, the County works closely with VDOT in the identification and implementation of priority transportation projects through the Six-Year Improvement and Secondary Road Improvement programs, updated annually. These projects represent the County's short-term priorities and are the culmination of significant programming, design and funding actions.

The County will continue its present practice of reviewing VDOT project plans for the Six-Year Improvement and Secondary Road Improvement Programs, while taking steps with VDOT to arrange a more formal role for the County and local citizens and associations in the design process. The County will continue to urge VDOT to design its projects in rural Loudoun County with more sensitivity to the environment, the ambiance, and rural character of the area. Examples of road improvements that have been designed with extensive participation by the County and local citizens include Snickersville Turnpike (Route 734), and Lime Kiln Road (Route 733). In those instances where new roads are designed and constructed by the private sector, the County and the state share the responsibility to ensure that these facilities meet standards that allow their acceptance into the state system for maintenance and operation.

VDOT's Local Partnership program offers opportunities for the County to directly manage construction, as well as planning, environmental clearance, design and permitting, of transportation projects. This approach may enable streamlining of project development, saving time and money in the process and bringing projects to fruition in an abbreviated time-frame compared to past projects. In 2006, Loudoun County's application to participate in VDOT's Local Partnership Fund was approved for the rehabilitation of historic Hibbs Bridge on Route 734. In that year, the Local Partnership Fund provided \$40 million to encourage localities to manage and administer upcoming construction projects. The County was one of ten localities for which participation was approved. The Hibbs Bridge project was successfully completed by the County's Office of Capital Construction in 2007.

The County also works with VDOT and developers in the land-development review process regarding road-improvement issues, including through the Chapter 527 legislation passed by the Virginia General Assembly effective July, 2007. This legislation allows VDOT to review and submit comments on comprehensive plans and plan amendments, rezoning proposals, subdivision plats and site plans and associated traffic impact analyses that meet certain criteria. It is intended to provide local governing bodies and their constituents with additional information to aid in the land use and transportation decision-making process. In general, comprehensive plans or plan amendments that have a substantial impact on, or cause a substantial change to, the existing transportation network or state-controlled/maintained highways, and land development applications that have a significant impact on state-controlled highways must be submitted to



VDOT for review and comment. The specific criteria that are used with each type of application are contained within the VDOT *Revised Traffic Impact Analysis Regulations Administrative Guidelines*, 24VAC30-155.

The County intends to continue the current VDOT/County relationship, but will seek to implement changes in VDOT policies and standards as necessary to ensure that the County can provide a cost-effective and safe road network with flexibility to accommodate the County's land use, community design objectives and bicycle and pedestrian facilities as identified in the *Loudoun County Bicycle and Pedestrian Mobility Master Plan* and the *2010 CTP*.

B. Route 28 Highway Transportation Improvement District Commission and Advisory Board

The Route 28 Highway Transportation Improvement District Commission administers the Route 28 Highway Transportation Improvement District, established by Loudoun County in partnership with Fairfax County in 1987 to accelerate limited access improvements to Route 28, a key artery in the region. The Commission is made up of members of the Boards of Supervisors from both Counties and has the authority to subject the owners of industrial and commercial property within the District to a maximum additional tax assessment of 20 cents per \$100 of assessed value. The funds collected are used for the road improvements and debt service on bonds issued by the state. The Route 28 Highway Transportation Improvement Advisory Board submits an annual report to the District Commission on the transportation needs of the District and activities of the Board, and presents special reports concerning the District tax as requested by the Commission or either Board of Supervisors. The Advisory Board consists of members appointed by the Boards of Supervisors and selected by landowners within the Route 28 District.

C. Other Coordination

As an extension of its coordination with other agencies, particularly VDOT, the County works with other key entities to ensure appropriate coordination is accomplished for certain transportation issues and projects. The most common of these are as follows:

- The County cooperates with its towns and neighboring jurisdictions as well as regional agencies;
- The County develops and pursues a legislative program with the Virginia General Assembly that includes transportation facilities and funding and also coordinates with other jurisdictions on transportation matters of mutual interest.

State, County and Other Partnership Policies

1. The County will continue to encourage the Virginia Department of Transportation (VDOT) to participate in long-range planning processes to provide the input for the formulations of County transportation policy.
2. The County will work with officials and citizens of its towns to discuss transportation issues and opportunities. Participation of local citizens and associations in local road design will be encouraged as part of the process for the Primary and Secondary Road Programs.
3. The County will remain involved in the state's Six-Year Improvement and Secondary Road Improvement Programs and, in other cases, where mutual or regional transportation issues and opportunities arise.
4. The County will continue its involvement in VDOT decision processes and will seek mutually acceptable policy positions through formal and informal channels.



5. The County will obtain VDOT's input into development applications through the County's application referral process, and by working with VDOT and applicants to ensure that proposed public streets are accepted into the state's system. This will include submissions of development related traffic impact analysis to VDOT for review in accordance with the Chapter 527 legislation.
6. To the extent that project costs and timelines can be minimized by doing so, the County will consider administering environmental clearance, design, permitting and construction management of transportation projects under the Local Partnership Program.

III. Local Control and Management Options

In Virginia, responsibility for roads in most counties lies with the state. However, state legislation permits counties to take responsibility for road management. This local control is mandatory in incorporated communities larger than 3,500 people and in cities. Leesburg and Purcellville presently have this responsibility. Recent indications are that the state may encourage increased local responsibility as a means of reducing costs. The terms of transferring responsibility from VDOT to Loudoun County would require agreement by the Commonwealth Transportation Board and County voter approval in a public referendum. Local management and responsibility for roads would entail significant costs to the County.

Should Loudoun choose to maintain its local roads, the County could face annual maintenance expenditures, depending on the level of state funding to the County. This figure does not include the potentially larger costs of additional preconstruction and review staff, equipment, materials, and other costs associated with local control of secondary roads. For now, the County has chosen to continue relying on VDOT's management and maintenance support of all primary and secondary public roads in the county. The County will simultaneously examine ways of working with VDOT to allow for the efficient and flexible use of maintenance funds for appropriately-designed improvements.

The Public-Private Transportation Act of 1995 (PPTA) is the legislative framework enabling the Commonwealth of Virginia, qualifying local governments and certain other political entities to enter into agreements authorizing private entities to acquire, construct, improve, maintain, and/or operate qualifying transportation facilities. The public entities may either solicit or accept unsolicited proposals from private sources. Loudoun County has utilized the PPTA to fund needed transportation improvements in the Route 28 and Dulles Greenway Corridors. Planned transportation projects beyond those currently constructed in these corridors will be evaluated to assess whether application of the PPTA is appropriate.

Local Control and Management Options Policies

1. The Virginia Department of Transportation (VDOT) will continue to have responsibility over all public roads in Loudoun County, except incorporated towns with populations larger than 3,500 people.
2. The County will encourage transportation projects that minimize the fiscal impact of construction, operation, and maintenance on the County to the extent that such projects are also consistent with the County's land use, environmental and historical preservation policies.
3. All roads to be maintained by VDOT will be built to VDOT standards or VDOT permitted variations from VDOT standards for admission into the state system.
4. The County will review any transportation projects proposed for construction in Loudoun County under the provisions of the Virginia Public-Private Transportation Act of 1995 (PPTA).



Chapter 7

Protection of the Environment

As Loudoun County implements its vision for the transportation network, the protection of the environment will continue to be a top priority. Consistent with federal legislation and the policies of the *Revised General Plan*, this chapter of the *2010 CTP* contains policies that support the protection of the Green Infrastructure, with the addition of specific environmental policies to address transportation-related impacts. In the sections that follow, these policies are outlined by subject area, including air quality, water quality, noise and heritage resources. Additional policies on these issues can be found in Chapter Five of the *Revised General Plan*.

I. Air Quality

Loudoun County is actively involved in the protection of air quality through its engagement in the regional planning process. The County participates in this process as a member of the National Capital Region Transportation Planning Board (TPB), the Metropolitan Planning Organization (MPO) for the region. The Washington Metropolitan region is currently designated by the US Environmental Protection Agency (EPA) as a non-attainment area for federal health standards with respect to ozone and fine particles (PM_{2.5}), which means that potentially serious health problems can be expected as a result of the levels of these pollutants in the atmosphere. In 1977, Federal clean air legislation was enacted which specified that an MPO could not approve any transportation project that did not conform to a State Implementation Plan (SIP) for attainment of clean air standards. Following in 1990, the Clean Air Act Amendments (CAAA) further defined conformity of an implementation plan as “meeting the purpose of eliminating or reducing the severity and number of violations of the national ambient air quality standards and achieving expeditious attainment of such standards.”

Each year the TPB updates two regional planning documents that make up the implementation plan. The Financially Constrained Long-Range Plan (CLRP) and the Regional Transportation Improvement Plan (TIP). The CLRP has a long-range planning horizon of 25 years while the TIP focuses on all regionally significant projects in a short-term six-year time frame. Both the CLRP and TIP are required to have an EPA finding of air quality conformity each time they are updated.

The most recent CLRP and TIP (2009 CLRP and FY2010-2015 TIP, respectively) have been demonstrated to be in conformance with regional transportation plans according to the Air Quality Conformity Assessment. Should air quality conformity fail to be attained in the future, the region could face federal sanctions, including loss of highway funding.

It is very important that Loudoun County adopt policies that are supportive of lowering total vehicle emissions and meeting air quality standards. The County’s land use policies, calling for high density development at major transit nodes and implementation of transit routes are important factors. In the *2010 CTP*, there is comprehensive policy support for modes other than the single-occupant auto. These policies promote new transit and ridesharing services—metrorail, express inter-jurisdictional bus, and local bus as well as car and vanpools. They include bicycle and pedestrian improvements as well as travel demand management strategies such as telecommuting and flexible work hours. As outlined throughout the *2010 CTP*, the County supports these types of measures to reduce the use and dependence on the private automobile.



Air Quality Policies

1. The County will participate in the regional Clean Air Act Attainment Plan air quality conformity evaluation process.
2. All transportation planning will be conducted within the context of meeting the Federal Air Quality Standards established for the region by the Clean Air Act Amendments of 1990 and the federal Environmental Protection Agency (EPA).
3. The County will implement land use policies that will reduce vehicular trips and vehicle miles traveled to achieve the air quality standards required by the federal, state or county government, whichever are the most stringent. Such land use measures may promote pedestrian facilities, bicycle use, ridesharing, mass-transit options, and mixed-use communities.

II. Water Quality

The *Revised General Plan* calls for the protection of rivers and streams and their corridors by defining river and stream corridor resources as rivers and streams draining 100 acres or more; their associated floodplains; adjacent steep slopes (slopes 25 percent or greater, starting within 50 feet of streams and floodplains, extending no farther than 100 feet beyond the originating stream or floodplain); a 50-foot Management Buffer surrounding the floodplains and adjacent steep slopes; and wetlands, forests, historic and cultural resources, and archaeological sites that fall within the area of one or more of the above elements. The County also seeks to preserve and protect the quality of surface water and groundwater by protecting those underlain by limestone. In Loudoun County, disturbances to river and stream corridors and their associated floodplains are regulated by the United States Army Corps of Engineers (the Corps) and the Virginia Department of Environmental Quality (DEQ), with regular coordination with the County's Department of Building and Development. The Corps and DEQ call for the avoidance and minimization of impacts to the maximum extent practicable and to provide compensatory mitigation for authorized impacts exceeding established thresholds. The County supports measures that protect water quality by minimizing the intrusion of the road network on river and stream corridor resources and areas underlain by limestone.

Water Quality Policies

1. Road crossings of the river and stream corridor resources will avoid or, when avoidance is not feasible, minimize and mitigate disturbances within floodplains and steep slopes. Road crossings will be constructed generally perpendicular to the flow of the drainageway to minimize impacts. Road alignments designed to extend within and parallel to the floodplain will be avoided.
2. Road crossings will avoid, minimize, and compensate for filling of jurisdictional waters and wetlands in a manner consistent with requirements of the United States Army Corps of Engineers and the Virginia Department of Environmental Quality. A natural stream channel will be maintained beneath road crossings to minimize impacts on stream flow and habitat. Unavoidable filling of jurisdictional waters and wetlands will be mitigated according to the following priorities: 1) adjacent to the road crossing 2) within the same stream watershed and Policy Area, 3) within the same stream watershed within Loudoun County, or 4) elsewhere within Loudoun County.
3. Forested riparian buffers are a crucial component of the Green Infrastructure. Road crossings will avoid disturbance of forested riparian buffers. Where this is not feasible, road crossing projects will include reforestation to compensate for lost forest habitat.
4. The County will consider adoption of the environmental regulations of the Chesapeake Bay Preservation Act.
5. Road projects proposed in areas underlain by limestone will seek to avoid karst/sensitive environmental features.



III. Noise

It is the County's intention to protect residents from exposure to excessive noise from transportation facilities within reasonable limits by applying recognized standards. The *2010 CTP* also recommends adopting a highway noise ordinance in accordance with the State Noise Abatement Policy that outlines the standards for noise abatement that comply with federal laws (Appendix 7). This will ensure that the County receives federal and state assistance in mitigating traffic noise problems near existing developments. Finally, the County should adopt the state standards into the Zoning Ordinance to ensure that future development protects itself from noise problems. These policies are not intended to apply to temporary noise sources such as VDOT transportation construction projects. The County's airport and construction noise policies can be found in Chapter Five of the *Revised General Plan*.

Noise Policies

1. The County will require that all land development applications that propose land uses adjacent to any of the existing and/or proposed arterial and major collector roads will be designed to ensure that no residential or other type(s) of noise-sensitive use(s) will have Traffic Noise Impacts, which occur when the predicted traffic noise levels approach or exceed the noise abatement criteria (Table 7-1), or when the predicted traffic noise levels substantially exceed the existing noise levels. A noise level is considered to approach the noise abatement criteria when it is 1 dBA less than the noise abatement criteria for a defined use. A noise level is considered to substantially exceed existing noise levels when noise levels increase by 10 dBA or more. To determine the predicted highway noise levels and to assess noise impacts at a particular location, a land development applicant will be required to use the latest version of the Federal Highway Administration's Highway Traffic Noise Prediction Model (FHWA-RD-77-108, as amended). The design year noise level will be understood to be the noise associated with probable traffic volumes for said arterials and major collectors at a time of 10 to 20 years from the start of construction based upon the most recent, applicable forecast available from the Office of Transportation Services. The noise study will also reflect the ultimate road configuration as defined in the *2010 CTP*, the ultimate design speed, the pavement type and proposed topography associated with land development applications, as opposed to existing topography.



Table 7-1
Noise Abatement Criteria (NAC) Hourly A-Weighted Sound Level in Decibels (dbA)

| Activity Category | Leq (h) | Description of Activity Category |
|--------------------------|----------------|---|
| A | 57 (exterior) | Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose. |
| B | 67 (exterior) | Picnic areas, recreation areas, playgrounds, active sports areas, parks, residential yards, motels, hotels, schools, churches, libraries, and hospitals. |
| C | 72 (exterior) | Commercial uses or developed lands, properties, or activities not included in Categories A or B above. |
| D | --- | Undeveloped lands |
| E: | 52 (interior) | Residences, motels, hotels, public meeting rooms, schools, churches, libraries, hospitals, and auditoriums. |

Note: Traffic noise impacts can occur below the NAC. The NAC are not federal standards or desirable noise levels; they should not be used as design goals for noise barrier construction. The NAC should only be used as absolute values which, when approached or exceeded, require the consideration of traffic noise abatement measures.

2. The County will adopt a highway noise ordinance and will amend the Zoning Ordinance to implement the State Noise Abatement Policy, thereby minimizing future highway noise impacts and qualifying the County for federal and state assistance in the event noise-abatement features are needed to protect existing developments. With the adoption of the State Noise Abatement Policy, the County will adhere to the standards therein for mitigation of noise impacts from County-initiated road improvements. The County will also seek the authority to require that road improvements proposed by private interests will be required to abide by the same standards.
3. Noise abatement will provide at least a 5dBA reduction in highway traffic noise levels in order to provide noticeable and effective attenuation and will be in place prior to the issuance of occupancy permits for any impacted structures.
4. Structural noise abatement measures, such as concrete walls, shall not be used unless required noise reductions cannot be reached by other means. Passive noise abatement measures are preferred including adequate setbacks, earthen berms, wooden fences, and dense tree vegetation. When used, noise walls will include design elements such as articulated walls and gradual descents that blend with natural features in the landscape. Walls should be supplemented with appropriate landscaping and reflect the character of the surrounding natural environment.
5. Construction and maintenance costs associated with noise abatement measures needed for land development activities will be borne by the associated development(s).

IV. Heritage Resources

The rural character of the County is deeply associated with the County's rich history. Stone walls and tree-lined rural roads frame great expanses of farmland dotted with historic homes, barns, and small farm structures creating a unique Loudoun landscape. In addition to these scenic resources, there are six County-administered historic districts, two town-administered historic districts and one historic district on the Virginia Register of Historic Places. Loudoun has 70 historic sites and districts listed in the National Register of Historic Places and many historic and archeological resources yet to be evaluated for the Register, as well as five National Landmark sites. Loudoun County has most recently been recognized as part of the nationally renowned "Journey Through Hallowed Ground" corridor, a historically and culturally



significant corridor that extends outside of Loudoun County, and follows Route 15 and Virginia Routes 20, 231, 22 and 53 from Gettysburg, Pennsylvania, to Charlottesville, VA. The County Board of Supervisors joined the Journey Through Hallowed Ground Partnership in 2008 with the issuance of a resolution of support for this national heritage area. This corridor includes many of the sites already recognized in the County as historic treasures. All of these sites are major tourist destinations. The impact that roads and other means of transportation have on the rural landscape must be considered during the design of road-improvement and new construction projects. These sites are closely tied to their rural settings and can be negatively affected by road projects.

One method used by the County to help facilitate the preservation of scenic roads and their associated landscapes is through state-designated “Virginia Byways,” as authorized by the 1966 Scenic Highway and Virginia Byways Act. Virginia Byways are corridors with significant aesthetic and cultural value, leading to or lying within areas of historical, natural or recreational significance. Virginia Byways designation could ensure valued heritage resources are considered as part of road improvement and maintenance projects. The designation does not guarantee the conservation and protection of roadways or their adjacent corridors. Local land use controls are still needed to preserve the unique character of the Virginia Byway corridor. Seventeen Virginia Byways are located in the County. They are:

- Route 7 (Colonial Highway) from the intersection with Route 287 in Purcellville east through the Town of Hamilton to the intersection with Route 699 (Dry Mill Road);
- Route 9 (Charles Town Pike) from its intersection with the Route 7 bypass and Route 662 (Clarkes Gap Road) to the West Virginia State Line;
- Route 15 (James Monroe Highway) from the Maryland State Line south to the Prince William County Line;
- Route 662 (Clarkes Gap Road) from Waterford to Route 9 at Paeonian Springs;
- Route 665 (Loyalty Road) from Taylorstown to Waterford;
- Route 671 (Harpers Ferry Road) from its intersection with Route 9 (Charles Town Pike) to the intersection with Route 340 near the Potomac River;
- Route 673 (Milltown Road) from the intersection with Route 287 (Berlin Turnpike) in Lovettsville to the intersection with Route 681 (Milltown Road) southwest of Lovettsville;
- Route 681 (Milltown Road) from the intersection with Route 673 (Featherbed Lane) to Route 698 (Old Wheatland Road) near Waterford;
- Route 690 (Mountain Road) from Route 673 (Irish Corner Road) near Lovettsville to Hillsboro;
- Route 699 (Dry Mill Road) from the intersection of Route 7 (Colonial Highway) to the intersection of Loudoun and King Street (Route 15) in the Leesburg Historic District;
- Route 704 (Harmony Church Road) from the intersection of Route 7 (Colonial Highway) in Hamilton to Route 15;
- Route 719 (Woodgrove Road) from Round Hill to Hillsboro;
- Route 722 (Lincoln Road) from the southern boundary of Purcellville, including the JLMA, to the intersection with Route 728 (North Fork Road);
- Route 728 (North Fork Road) from the intersection of Route 722 (Lincoln Road) to the intersection of Route 731 (Watermill Road);
- Route 731 (Watermill Road) from the intersection of Route 728 (North Fork Road) to the intersection with Route 734 (Snickersville Turnpike); and



- Route 734 (Snickersville Turnpike) in its entirety from Bluemont to Aldie.
- Route 751 (Cider Mill Road) in its entirety from the intersection of Route 719 (Woodgrove Road) to the intersection with Route 9 (Charles Town Pike)

The County will also seek Virginia Byway designation for Route 626 and Route 50 in the Mosby Heritage Area.

Section 6-1803 of the Zoning Ordinance empowers the County to further protect historic roads through the designation of Historic Roadway Districts and Historic Access Corridor Districts. Routes 50 through the Mosby Heritage Area will be considered for designation as either a Historic Roadway Districts or Historic Access Corridor and Route 626 will also be considered for designation as a Historic Access Corridor. The County will work with the Town of Leesburg to designate Edwards Ferry Road from Battlefield Parkway east to River Creek Parkway as a Historic Access Corridor. The Beaverdam Creek Historic Roadways District has already been established using this section of the Zoning Ordinance.

See also Chapter Five of the *Revised General Plan* and the *Heritage Preservation Plan* for additional policy direction on the County's heritage resources.

Heritage Resource Policies

1. The 2010 CTP maintains and supports the policies contained in the *Revised General Plan*, as implemented by the Zoning Ordinance, to protect the cultural, historical and archeological resources, the agricultural and forestall districts, "Virginia Byways" and overall rural and community character features in the County.
2. In accordance with the Heritage Resources Policies in Chapter Five of the *Revised General Plan* and the *Heritage Preservation Plan* the County will implement measures to protect cultural, historic and archaeological sites which are affected by state-funded road improvement projects. Additionally, the County supports archeological studies for state-funded improvements.
3. The creation of Historic Roadway Districts and Historic Access Corridors will be pursuant to the Zoning Ordinance. No property may be placed in any type of historic roadway district or historic access corridor without the written consent of a two-third majority of the property owners in the district.
4. The County will identify, define, and/or designate Virginia Byways, Historic Roadway Districts, and Historic Access Corridor Districts beneficial to preserving the rural and community character of the County. The County has identified the following priorities:
 - a. To protect the entrance corridor to the National Register Middleburg Historic District, as well as the scenic and historic character and importance of the first paved road in the Commonwealth, the County will designate Route 50 through the Mosby Heritage Area as a Historic Access Corridor or Historic Roadway District as provided for in the 1993 Zoning Ordinance. To further protect the entrances to the Middleburg Historic District, the County will designate Route 626 (Foxcroft Road and The Plains Road) as a Historic Access Corridor as provided for in the 1993 Zoning Ordinance.
 - b. The County will pursue Virginia Byways designation by the Commonwealth for Route 626 in its entirety and Route 50 in the Mosby Heritage Area.
 - c. The County will work with the Town of Leesburg to designate Edwards Ferry Road from Battlefield Parkway east to River Creek Parkway as a Historic Access Corridor.



Chapter 8

Funding

Contained within this chapter are the policies that guide Loudoun County's pursuit and use of various forms of funding to finance investment in transportation infrastructure and thus ultimately realize the vision for transportation outlined in this document. The chapter includes a section with policies devoted specifically to proffers, a key mechanism for obtaining funding for transportation projects. The chapter begins with an overview of funding sources, initiatives and funding-related matters of specific relevance to Loudoun County. For specific information on planned transportation expenditures within the County, please refer to the County's latest Adopted Fiscal Plan, the VDOT Six-Year Improvement Program and the VDOT Secondary Road Improvement Program.

I. General Funding

The planning, design, construction, operation and maintenance of a multi-modal transportation system are completely dependent upon the availability of adequate funding. The funding of transportation infrastructure requires significant expenditure of capital, typically beyond the resources of local government. Traditionally, the County has depended on State and Federal funds for the design and construction of transportation projects, augmented by private sector contributions, known as proffers. However, in recent years, traditional sources of funding have dwindled, forcing the County to increasingly rely upon private sector contributions, and to implement alternatives, including the sale of bonds and the use of innovative financing options. For example, in November, 2006, Loudoun County voters approved the County's first ever local road bond referendum in the amount of \$51.3 million. The approval allowed for the sale of bonds to pay for the construction of an interchange at the intersection of Routes 7 and 607, a section of Russell Branch Parkway associated with the interchange, and the full or partial design of six additional road projects. The approval of this referendum represents a commitment by the County and its voters to ensure the provision of priority transportation improvements in an effort to promote both economic development and quality of life.

While the County has been successful in utilizing alternative means to finance transportation projects, the inherent uncertainty in the timing of infrastructure improvements linked to private sector projects remains a challenge. Also, key projects continue to remain unfunded or under-funded where alternative financing methods are unavailable or inadequate. Finally, rising construction costs further complicate the issue. Accordingly, the County places an emphasis on setting priorities through annual project review and provides guidelines and direction for funding acquisition and management.

The various sources of funding that are available to the County are summarized in Table 8-1 and discussed in greater detail in the sections that follow, according to fund type. These include state, federal, local and private-sector funding sources. Each of the listed funding programs has specific criteria that must be met in order to be used. The County seeks to take advantage of all available resources, or a combination thereof, in an effort to secure adequate funding and advance its transportation initiatives.



Table 8-1
Overview of Funding Sources

| | Freeways | Primary Roads | Secondary Roads | Transit | Bicycle | Pedestrian | Virginia/ Scenic Byways |
|--|----------|---------------|-----------------|---------|---------|------------|-------------------------------|
| State Funding Sources | | | | | | | |
| Six-Year Improvement Program* | X | X | | X | X | X | X |
| Secondary Road Improvement Program | | | X | | X | X | |
| State Revenue-Sharing Program | X | X | X | | X | X | X |
| State Recreational Access Funds | | | X | | X | | |
| Economic Development Access Program | | | X | | X | X | |
| Local Funding Sources | | | | | | | |
| Local Gasoline Tax | X | X | X | X | | | |
| Business Professional and Occupancy License Revenue | | | | X | | | |
| The Public-Private Transportation Act of 1995 (PPTA) | X | X | X | X | X | X | |
| Federal Funding Sources | | | | | | | |
| Regional Surface Transportation Program Funds | X | X | X | X | X | X | |
| STP Enhancement Program | | X | X | | X | X | X |
| STP Safety Program | | X | X | X | X | X | |
| Congestion Mitigation and Air Quality Improvement | | **X | X | X | X | X | |
| Private Sector Funding Sources | | | | | | | |
| Special Tax Districts | X | X | | X | | | |
| Community Development Authorities (CDA) | X | X | X | | X | X | |
| Private-Sector Toll Road Construction | X | | | | | | |
| Bond Financing for Transportation Projects | X | X | X | | X | X | |
| Impact Fees | X | X | X | X | | | |
| Other Funding Sources | | | | | | | |
| Proffers | X | X | X | X | X | X | X |

* Includes all anticipated funds that are channeled through the Commonwealth Transportation Board

** Applies only to Coordinated Traffic Signal Program

II. State Funding Sources

A. Six-Year Improvement Program (SYIP)

Each year the Commonwealth Transportation Board updates the Six-Year Improvement Program that distributes funds available for construction on the interstate, primary and urban highway systems, as well as funds available for the Secondary System and the other transportation modes: ports, airports, and rail and public transportation.

After meetings at the District level, VDOT staff prepares a working draft of the Six-Year Improvement Program complying with the policy goals of the Commonwealth Transportation Board that include paying off deficits on completed projects and not creating new deficits, fully funding construction projects by the time they are complete, bringing phased projects or programs to a reasonable stage of completion, and requiring that new projects added to the program be eligible for federal funds.

Typically, the working draft of the Six-Year Improvement Program is released in the early spring and then a final public hearing is held. The Loudoun County Board of Supervisors considers the draft and prepares a statement concerning the draft plan. After this public hearing, the Commonwealth Transportation Board will adopt the final Six-Year Improvement Program for the next fiscal year. The Six-Year Improvement Program also contains projects funded under the current Federal Transportation legislation as well as the specially funded projects designated by the U.S. Route 58 Corridor Development Program.



The plan divides projects into two distinct phases, the Feasibility Phase and the Six-Year Capital Improvement Program Phase. Projects in the Feasibility Phase are those under study, such as a federally mandated environmental assessment, feasibility study, or a location study. The Six-Year Capital Improvement Program Phase includes projects that have met the regulatory and public participation requirements, and includes final design, right-of-way acquisition, and construction.

Due to the lack of a dedicated, sustainable funding source for transportation, the Commonwealth has not been able to provide adequate funding to meet the County's transportation needs. Furthermore, the program is highly competitive. Loudoun County must compete with the more populous Northern Virginia jurisdictions. It is difficult to place new major primary road projects on the program and once projects are on the list, the wait is long before advancing to construction.

B. The Secondary Road Improvement Program (SRIP)

The Secondary Road Improvement Program (SRIP) is updated every year by the County in cooperation with VDOT. It provides state and federal STP funds for the construction of secondary road improvements. The funds are distributed to counties through a series of formulas. Secondary road funds are 30 percent of the state's construction funds available each year. Due to declining revenues for transportation overall, secondary road funds have significantly decreased in the past several years. Each county receives its share of secondary road funds determined by a formula based on 80 percent for population and 20 percent for land areas. Unpaved road funds are allocated to the County based on its share of the total unpaved miles eligible for funding in the state.

The program provides opportunities for public input and many of the SRIP projects originate through requests from the public. The County has been able to combine Local Gasoline Tax, Revenue Sharing Program funding and private-sector dollars with SRIP funds to accelerate construction schedules for key projects. However, without additional revenues, secondary road construction funds are likely to decrease over time due to statewide priorities. For costly projects, a project can be on the SRIP for a number of years before adequate funds are allocated. SRIP have total costs that far exceed the resources available within a six-year period.

C. State Revenue-Sharing Program

The purpose of the Revenue Sharing Program is to provide additional funding for use by a county, city, or town to construct, maintain, or improve the highway systems within such county, city, or town, and for eligible additions in certain counties of the Commonwealth. Locality funds are matched with state funds with statutory limitations on the amount of state funds authorized per locality. The program is administered by VDOT in cooperation with participating localities under the authority of Section 33.1-23.05 of the Code of Virginia. An annual allocation of funds for this program is designated by the Commonwealth Transportation Board.

Applications for program funding must be made by resolution of the governing body of the jurisdiction in which the road is located. Construction may be accomplished by VDOT or by the locality under agreement by VDOT, although locally administered projects receive a higher priority under this program.

Revenue sharing allows the County to leverage its Local Gasoline Tax dollars by matching one Local Gasoline Tax dollar for one revenue-sharing dollar, thereby doubling available resources for participating projects. This is the County's most flexible public funding source, since it may be used in conjunction with the Primary or Secondary Road Improvement Programs or proffer funds. However, revenue sharing is a modest funding source limited to \$1,000,000 per year.



D. State Recreational Access Funds

The purpose of the Recreational Access Program is to provide adequate access to recreational areas or historic sites operated by the Commonwealth of Virginia, a local government, or authority. Both roads and bikeways are eligible for program funding.

The program is administered by VDOT, and funding is provided under the authority of Section 33.1-223 of the Code of Virginia, with designation, recommendation and concurrency by the Director of the Department of Conservation and Recreation. Roads constructed under this program become a part of the appropriate highway system. Separate bikeways become the responsibility of the authority or agency maintaining the site, which they serve.

Prior to the allocation, the governing body of the county, city, or town must, by resolution, request the access funds. Recreational Access funding may not be used for the acquisition of rights of way or adjustments of utilities, and the governing body must state in its resolution that these items will be provided at no cost to the program.

For an access road to a facility operated by a locality or authority, the maximum unmatched allocation is \$250,000. Up to an additional \$100,000 may be allocated if matched dollar-for-dollar from other than highway sources. A maximum of \$60,000 unmatched may be allocated for a bikeway to a facility operated by a locality or authority. Up to an additional \$15,000 may be requested if matched on a dollar-for-dollar basis by the locality or authority.

E. Economic Development Access Program

The Economic Development Access Program is administered by the Commonwealth Transportation Board, which allocates funds, as provided under the authority of Section 33.1-221 of the Code of Virginia, for eligible projects from the Industrial, Airport and Rail Access Fund. The purpose of the program is to finance the construction or improvement of roads, with the exception of primary roads, to new or expanding qualifying economic development sites. These roads will provide access from the nearest adequate publicly maintained road to the property line of the qualifying site. Adequate access may require construction of a new roadway or improvement of an existing road. Qualifying sites are determined by the Commonwealth Transportation Board in consultation with the Virginia Economic Development Partnership and the Virginia Department of Business Assistance.

III. Local Funding Sources

A. Local Gasoline Tax

The County began to receive Local Gasoline Tax revenues in January 1989 with the formation of the Loudoun County Transportation District Commission (LCTDC). In January 1990, the LCTDC was dissolved, and Loudoun County became a member of the Northern Virginia Transportation Commission (NVTC). Local Gasoline Tax revenues are received by the Commonwealth and held in trust by NVTC for Loudoun County. Expenditure of Loudoun County's Local Gasoline Tax revenue is regulated by the Interim Transportation Plan (ITP) adopted by the former LCTDC on September 11, 1989, which organizes projects by category. Unlike other localities, Loudoun County can spend Local Gasoline Tax revenues for road improvements and bicycle and pedestrian improvements as called for in the *Loudoun County Bicycle and Pedestrian Mobility Master Plan* as well as transit. Others use the money solely for transit-related costs. It is anticipated that once Phase II of the Dulles Corridor Metrorail Project is complete, 100 percent of the funds will be directed to transit operating expenses. Currently, local gas tax is the source of much of the funding for transit in the County.

The use of Local Gasoline Tax funds has been flexible. Funds have been used to obtain state Revenue Sharing Program funds, to leverage private contributions for road construction, to supplement primary and



secondary road improvement projects, like traffic signals, to overcome delays, to supplement the Commuter Bus operating costs and for a variety of locally oriented transportation projects that have no other funding source.

B. Business Professional and Occupancy License (BPOL) Revenue

Business Professional and Occupancy License (BPOL) Revenue is generated through a license tax on businesses, professions, trades, and occupations based on their gross receipts. Loudoun County is planning to fund its share of Phase II of the Dulles Corridor Metrorail Project's capital needs with bonds serviced by a percentage of dedicated BPOL revenue. BPOL revenue may also be considered as a funding source for the provision of bicycle and pedestrian facilities, consistent with the *Loudoun County Bicycle and Pedestrian Mobility Master Plan*.

C. The Public-Private Transportation Act of 1995 (PPTA)

The Public-Private Transportation Act of 1995 (PPTA) is the legislative framework enabling the Commonwealth of Virginia, qualifying local governments and certain other political entities to enter into agreements authorizing private entities to acquire, construct, improve, maintain, and/or operate qualifying transportation facilities. Loudoun County, in coordination with the Commonwealth Transportation Board (CTB), accepted a proposal filed under the PPTA that will fund limited access improvements to Route 28. Five interchanges and several sections of the Route 28 parallel roads have been funded by the PPTA contract. Additionally, this funding stream has provided bicycle and pedestrian facilities on all roads and bridges crossing Route 28 and going through interchanges. Planned transportation projects beyond those currently constructed in the Route 28 corridors will be evaluated to assess whether application of the PPTA is appropriate.

IV. Federal Funding Sources

A. Regional Surface Transportation Program Funds

The Safe, Efficient, Accountable, Flexible, Efficient Transportation Act: A Legacy for Users (SAFETEA-LU) established several categories of Surface Transportation Program (STP) funding. Regional STP funds, thirty percent of the overall program, flow through the state formulas for primary, secondary, and urban road programs and are distributed through a regional allocation process. This process includes initial allocation of funds to projects through the NVTAP with final endorsement by the National Capital Region Transportation Planning Board (TPB).

The application of Regional STP funds is extremely flexible. Funds may go to primary or secondary road projects, projects in the Town of Leesburg, and transit projects. Furthermore, funds may be used to accelerate projects that have difficulty in advancing through other funding programs. However, the state is required to pay a 20 percent local match of federal funds and STP funds may only be applied to projects that are ready to be engineered or constructed. The process to obtain funding is both competitive and complex. Projects must be recommended by the NVTAP Policy Committee, and included in the Constrained Long-Range Plan (CLRP) and Transportation Improvement Program (TIP) by the TPB.

B. STP Enhancement Program

Ten percent of the state's yearly STP funding allocation is set aside for enhancement projects. These projects help improve quality of life by providing environmental amenities to the transportation system. The list of activities eligible for transportation enhancement funding includes pedestrian and bicycle facilities, pedestrian and bicycle safety education, transportation museums, and projects to reduce vehicle-induced wildlife mortality. Jurisdictions and private groups are eligible to apply to the state for enhancement funding through a competitive grant application process.



C. STP Safety Program

Ten percent of the state's yearly STP funding allocation is set aside for highway safety projects. Project funding is on a competitive basis with VDOT making the final selections.

D. Congestion Mitigation and Air Quality (CMAQ) Improvement Program

The CMAQ Program is another SAFETEA-LU funding category. In order to receive CMAQ funding, a project must demonstrate a positive impact on reducing vehicle emissions and improving air quality. Most past and proposed CMAQ projects are transit or ridesharing oriented.

The Washington Metropolitan Area Transit Authority (WMATA), the Virginia Railway Express, and the Potomac and Rappahannock Transportation Commission (PRTC) currently use all of Northern Virginia's federal formula transit funds. However, CMAQ funds may be used for local transit projects such as transit service start-up costs, the purchase of vehicles, or bus shelters, as well as certain bicycle and pedestrian facility projects. Also, CMAQ funds for traffic-signal coordination or ridesharing programs require no local match. However, CMAQ transit project funds require a 20-percent local match that the state currently does not pay. CMAQ projects are selected through the same competitive and complex process as Regional STP projects, involving approval of both NVTA and the TPB. At the present time, the selection process is dominated by jurisdictions belonging to WMATA. Virginia Rail Express (VRE) also is well represented in the selection process. This results in a large portion of CMAQ funds going to WMATA and VRE projects, making it difficult for local projects to compete.

V. Private Sector Funding Sources

A. Special Tax Districts

Route 28 was improved to a six-lane divided road through the use of a transportation service district authorized by State Code. A District may be created only by a resolution of the Board of Supervisors upon the petition of the owners of land representing at least 51 percent of either the assessed value of land or actual land area within the proposed district that is zoned for commercial or industrial use or is used for such purposes. The Route 28 Highway Transportation Improvement District (HTID) was established by resolutions of the Loudoun and Fairfax County Boards of Supervisors in 1987.

The Route 28 HTID demonstrates that a public-private partnership can construct a major road improvement using this funding technique. The Route 28 improvements were constructed in a short time frame. The District approach allows a major road improvement to be built before development occurs, avoiding congestion and maintaining good levels of service in the corridor.

The Route 28 HTID faced a major financial challenge during the recession of the early 1990s. Declining property values generated less than the expected revenues to cover debt service. However, recent economic development in the corridor has increased revenues to cover the debt service payment.

The use of tax districts for future road improvements in other corridors is limited. This technique is only feasible in corridors with substantial potential for commercial and industrial growth.

B. Community Development Authority (CDA)

The County may consider petitions for Community Development Authorities (CDAs) from the owners of at least 51 percent of the land area or assessed value of a given tract. CDAs are defined as "a public body politic and corporate and political subdivision of the Commonwealth" by the Virginia Code, and have the power to "finance, fund, plan, establish, construct or reconstruct, enlarge, extend, equip, operate and maintain" infrastructure improvements. These improvements may include "roads, bridges, parking



facilities, curbs, gutters, sidewalks, traffic signals, stormwater management and retention systems, gas and electric lines and street lights.” CDAs are empowered to raise funds through revenue bonds, special taxes, and special assessments on adjoining properties.¹

C. Private-Sector Toll Road Construction

The 14-mile extension of the Dulles Greenway constructed by the Toll Road Corporation of Virginia, a private corporation, opened to traffic in September 1995. The financing for the project was secured by the private sector with rights-of-way obtained through private-sector negotiations and transactions or private-sector proffers from land-development applications. Once the financing and permits were obtained for this project and construction commenced, construction proceeded very rapidly under private-sector management. However, rising toll levels have been and continue to be a public concern. These tolls are regulated by the State Corporation Commission (SCC) and subject to their review. In recent years, the Greenway has been expanded to six lanes along its entire length and interchanges added at Battlefield Parkway and Shreve Mill Road. Ultimately, the Greenway is slated to revert to state control.

D. Bond Financing for Transportation Projects

Many of Loudoun’s transportation projects have been financed by the sale of state bonds through the Northern Virginia Transportation Bond Act. Such improvements include the widening of Route 7 to six lanes between Route 28 and the Route 15 Bypass; the construction of the interchange at Route 7 and the Route 15 Bypass in Leesburg; and Route 15 safety improvements north of Leesburg. These bonds have been financed from different sources, such as recordation taxes, public right-of-way use fee, and the state’s general funds.

E. Impact Fees

An impact fee is an assessment or payable amount imposed on new development in order to generate revenue to fund or to recover reasonable costs of public facility improvements, the need for which are generated by new development. Section 15.2-2317 -2327 of the Code of Virginia authorizes counties to enact an impact fee program for roads. The fee must be based on a formula for road improvements with a specified service area or “traffic shed”. Road impact fees have not been used, in part, because transportation proffers through the rezoning process have been used successfully to construct significant road improvements. A deterrent to using the impact fee enabling law is a prohibition in the law from assessing an impact fee on any development that is covered by proffered conditions for any off-site road improvements. Extensive use of proffers in Loudoun has made it difficult to use impact fees.

A local jurisdiction can require impact fees from ministerial land-development actions, including subdivisions. However, impact fees may not be used in conjunction with the proffer system in the same area of a locality. It is difficult and costly to develop and maintain the program. Since the Six-Year Improvement and Secondary Road Improvement Programs would likely finance the public sector need to address existing congestion, impact fees could dictate which projects should be on the programs. Impact fee legislation allows for fee refunds but not reassessments to make up for construction shortages, which are often experienced with current road improvement projects. The legislation requires substantial survey and engineering data in each service area plan. Impact fees do not discriminate between developments, even though some sites are better suited to development than others. The legislation includes a provision for bonding as a funding technique, but impact fees may not produce a dependable income stream for repayment.

¹ Grimes, M.C., K.M. Mattingly, and J.S. Miller. Alternative Transportation Funding Sources Available to Virginia Localities, Virginia Transportation Research Council, VTRC 06-R17, Charlottesville, VA, 2006.



VI. Transit-Specific Funding Sources

A. Virginia Department of Rail and Public Transportation (DRPT) Managed Programs

DRPT manages three state and four federal aid programs that are the most likely sources of funding for public transit services in Loudoun County. The following descriptions summarize the information about these programs that was provided in *Public Transportation and Commuter Assistance Grant Program Application Guidance* (Department of Rail and Public Transportation, November 2008).

State Operating Assistance

The program provides funding for the following eligible operating expenses:

- ◆ Administrative costs
- ◆ Fuel and lubricants
- ◆ Tires
- ◆ Maintenance parts and supplies

The program does not cover the following expenses:

- ◆ Wages and salaries for vehicle operators, mechanics, vehicle maintenance workers, and non-vehicle maintenance workers
- ◆ Insurance allocated to the ineligible workers
- ◆ Labor costs associated with the contracted repairs of vehicles and related equipment

The financial assistance is allocated among the Virginia providers of public transportation on the basis of total operating expenses incurred during the most recent fiscal year. The maximum state participation is 95 percent of the eligible operating expenses. However, the funding has never been sufficient to achieve the maximum state participation. In the past, 13 to 23 percent of total operating costs have been paid with DRPT in formula funds.

State Capital Assistance

The program provides funding for the purchase, rehabilitation, or improvement of capital assets such as:

- ◆ Vehicles
- ◆ Safety and security equipment
- ◆ Maintenance and operations facilities
- ◆ Bus stops and shelters
- ◆ Real estate

The state match ratio for the conventional transit program is calculated by dividing the available state funding by the amount needed to support the non-federal share of all eligible projects. The maximum state participation is 95 percent. However, the funding has never been sufficient to achieve the maximum state participation. Over the past three years, the funding ratio has varied from 20 to 60 percent.

The State Paratransit (Demand Response) Program is a subset of the Capital Assistance Program. The maximum state participation is 95 percent. All projects are typically matched at the maximum participation ratio.



State Transportation Demand Management (TDM)/Commuter Assistance

The program supports the administrative costs of TDM and Commuter Assistance Programs. The maximum state participation is 95 percent. For the past several years, Loudoun County has been funded at a state participation rate of 80 percent

Funding for this program comes from the Transportation Efficiency Improvement Fund (TEIF), another state program. The TEIF funding is used to support both TEIF and TDM/Commuter Assistance projects. The amount of TEIF funding available for both programs has consistently been \$4.0 million annually.

DRPT reviews and rates the applications according to a specified list of criteria. It then includes the recommended applications in the draft Six-Year Improvement Program. The Commonwealth Transportation Board (CTB) releases the draft program for public comment. The CTB then approves the Improvement Program.

Federal Transit Administration (FTA) Section 5311 Rural Areas

This FTA program provides funding for operating and capital expenses for public transportation serving non-urbanized areas or areas of less than 50,000 in population. DRPT is the designated recipient for Virginia's Section 5311 program and is responsible for administering the funds. This is a major source of funding for Virginia Regional Transit.

The financial assistance is allocated among the Virginia providers of public transportation on the basis of the latest US Census population data for areas with a population less than 50,000. DRPT typically funds 50 percent of net operating expenses and up to 80 percent of eligible capital expenses after the net operating expenses are funded.

Net operating expenses are those expenses that remain after operating revenues are subtracted from eligible operating expenses. Operating revenues include passenger fares (farebox revenue), charter service revenues, and contract revenues.

Federal FTA Section 5316 Job Access and Reverse Commute Program (JARC)

The JARC program provides funding for capital, planning, and operating expenses that support transportation services designed to transport low-income individuals to and from jobs and activities related to their employment. The program applies to services in all areas — urbanized and rural.

DRPT is the designated recipient for Virginia's JARC program and is responsible for administering the funds. VRT is receiving JARC funding to support some of its services.

DRPT typically funds 50 percent of operating expenses. The maximum participation is 80 percent for capital projects.

B. Federal FTA Section 5307/5309 Urbanized Program

This FTA program provides funding for all capital expenses and operating expenses related to vehicle maintenance and non-vehicle maintenance. For urbanized areas that have populations greater than the 200,000 FTA directly allocates the funding to each urbanized area using a formula that uses the following statistics:

- ◆ Population
- ◆ Population density



- ◆ Revenue miles of service operated
- ◆ Passenger miles of service consumed
- ◆ Operating expenses

The population of the Washington urbanized area exceeds 200,000 and FTA directly allocates funding to the area. An agreement has been reached among the local governments in the area that the majority of the 5307 funding is given to WMATA to fund the needs of its bus and rail system. The local governments agreed to this arrangement because they also are members of the WMATA “Compact.” The Compact was formed to fund the services operated by WMATA. Loudoun County has agreed to be a Compact member and will be required to provide funding to WMATA when Metrorail service is extended to the County.

Loudoun County does not receive any 5307/5309 funding. It does file a National Transit Database report to FTA about its commuter bus service to Washington DC. The statistics that it reports are credited to the Washington urbanized area. By reporting annually, Loudoun County increases the 5307 funding that the Washington area receives.

It is estimated that the Loudoun County commuter service generated an additional \$715,000 for the Washington area in FY 2008. This estimate was made by comparing the estimates of the FTA apportionment with and without Loudoun County’s transit statistics.

VII. Additional Bicycle and Pedestrian Funding Sources

The federal government offers a number of programs that are dedicated to providing funding for most bicycle and pedestrian projects. The programs are diverse and are made available for eligible projects according to their own sets of criteria. Each is listed below. Additional information is available at www.fhwa.dot.gov.

- Hazard Elimination Program
- Recreational Trails Program
- Federal Lands Highway Program
- National Scenic Byways Program
- Job Access and Reverse Commutes Grants
- High Priority Projects and Designated Transportation Enhancement Activities
- Urbanized Area Formula Grants
- Capital Investment Grants and Loans
- Formula Program for Other than Urbanized Area
- State and Community Highway Safety Grants (Section 402)

Funding Policies

1. The County will seek funding for the construction of the planned transportation facilities as outlined in the 2010 CTP and the *Loudoun County Bicycle and Pedestrian Mobility Master Plan* through a variety of public and private funding sources, including federal, state, and local funds, public-private partnership funds, private-sector proffer donations, and private property owner easements, and citizen donations.
2. The funding of needed safety improvements is a County priority.
3. The County will seek its fair share of funding sources, which include state, local and federal funds. The County will continue to seek innovative funding measures, such as bond financing, special taxing districts, private toll roads, SAFETEA-LU grants; Community Development Authorities (CDAs), and



measures envisioned by the Public-Private Transportation Act (PPTA) to assist in financing roads, alternative transportation mode(s) and transit improvements.

4. The County will continue to work with the Commonwealth Transportation Board and the General Assembly to ensure that Loudoun County continues to receive its fair share of state funding through all funding mechanisms.
5. Loudoun County will work with the state to establish a more accurate assessment of Loudoun County's transportation needs prior to changing funding formulas or developing new sources of transportation funds.
6. The County supports:
 - a. Protecting Revenue Sharing Programs and the Local Gasoline Tax Program funds;
 - b. Additional state and local revenue sources for transportation;
 - c. Use of Northern Virginia Transportation District Program bonds, which rely on recordation taxes, right-of-way fees, and other funds, to fund priority transportation projects. Future bond authorizations should have advance approval by the Board of Supervisors;
 - d. Holding Loudoun County's unpaved roads funds to at least the current level and preferably increasing funding levels for the next six years;
 - e. More flexibility in VDOT local road standards to allow for safety improvements on roads at lower cost; and
 - f. Use of the Commonwealth's Airport Fund for appropriate transportation projects.
7. The County will request the state to adopt formulas for allocating the Transportation Trust Fund in Virginia that provide the greatest alternative mode and primary and secondary road funding.
8. The County will continue to pursue and use federal Congestion Mitigation and Air Quality Improvement (CMAQ) funds and state transit capital and operating funds to increase transit options in the Suburban Policy Area. The County will also seek CMAQ funds for eligible bicycle and pedestrian facility projects as called for in the *Loudoun County Bicycle and Pedestrian Mobility Master Plan*.
9. The County will seek SAFETEA-LU funds for bicycle facility improvements and programs as outlined in the *Loudoun County Bicycle and Pedestrian Mobility Master Plan*.
10. The County will support the construction of pedestrian overpasses where needed through acquisition of public-sector funding sources such as SAFETEA-LU Enhancement Program funds, as well as private-sector contributions.
11. The County will pursue funding through VDOT's grant programs to support multimodal transportation planning and the integration of transportation and land use. These programs include the Multimodal Transportation Planning Office's grant program initiated in 2007 and the Safe Routes to School program initiated in 2006.
12. The County will continue to use funds derived from the Loudoun County Local Gasoline Tax Program and designated transportation funds and transportation proffers derived through development applications to match state revenue sharing funds.
13. The County may allocate a portion of local gas tax revenues and designated transportation funds to advance partially proffered road improvements, construct safety and transportation spot improvements, and provide bicycle and pedestrian improvements as called for in the *Loudoun County Bicycle and Pedestrian Mobility Master Plan* and the 2010 CTP until such time as these funds are directed entirely to transit operating expenses.



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14. Any expenditure of Local Gasoline Tax revenue must fall into at least one of the following elements:
 - a. Transportation Improvement category:
 - i. Intersection safety improvements on the roads of the Primary system;
 - ii. Spot improvements that improve safety on rural roads;
 - iii. Interchange or intersection improvements along Route 7 and Route 50;
 - iv. Improvement and promotion of public transportation, including park-and-ride lot development, car- and van-pooling, commuter bus service, and other transportation system management measures, including bicycle and pedestrian facilities as outlined in the *Loudoun County Bicycle and Pedestrian Mobility Master Plan* and the *2010 CTP*;
 - v. Enhancement of human-service specialized transportation programs, particularly for elderly and handicapped persons;
 - vi. Special transportation planning studies (such as warrant studies and traffic impact studies);
 - vii. Traffic calming measures; and
 - viii. Creation and implementation of an alternative transportation network (i.e. bicycle and pedestrian facilities).
 - b. Intergovernmental and public/private cooperation category:
 - i. Leverage private contribution to expedite road construction;
 - ii. Supplement funding to expedite primary or secondary road projects;
 - iii. Supplement regionally oriented road improvements within or near incorporated towns;
 - iv. Provide the local share for the state's Revenue Sharing Program; and
 - v. Provide for use of local tax revenues as payment for road improvement bonds.
 15. The County and private developers will fund the development of park-and-ride lots. The County will seek funds from a variety of sources including federal, state, County and Local Gasoline Tax, and other private sector sources.
 16. The County will review annually a primary road project's priority through the state's Six Year Improvement Program (SYIP) and annually review the secondary road priorities through the Secondary Road Improvement Program (SRIP).
 17. Notwithstanding a commitment to secure future reimbursements, preference for the use of available public funding will be given to improvement projects that are necessary to complete final sections of a transportation facility that is of high priority in the *2010 CTP* when no other funding option exists.
 18. The County will make maximum use of available and designated transportation funding sources to construct alternative transportation networks and road improvements specified in this plan and the *Loudoun County Bicycle and Pedestrian Mobility Master Plan* in the shortest possible time frame.
 19. Where appropriate, the County will combine funding from two or more funding sources to provide expedited construction schedules for alternative transportation networks and road improvements.
 20. The County will seek to apply funding to the priorities listed in Appendix 3 and priority trails listed in Chapter 5 of the *Revised General Plan*.



VIII. Proffers

Proffers are voluntary commitments made by a land-owner at the time that an application for a zoning map amendment is approved, and the County will not suggest, request, require or accept any proffered commitments unless and to the extent such proffers are consistent with County Proffer Policies and Proffer Guidelines as set forth in Chapters 3 and 11 of the Revised General Plan. Proffers are enforceable agreements that run with the land and are intended to offset the impacts of a proposed development. Proffers are reviewed for implementation during the site plan and subdivision processes that come after a rezoning process. Proffers, in the form of physical improvements or cash contributions, assist in improving the public infrastructure needed to serve new residents and users of new developments.

Ensuring that the impacts of a project on both the regional and local transportation system are addressed is of primary importance to the County. Preferably, the County seeks physical transportation improvements in accordance with all applicable policies of the *Revised General Plan*. However, to the extent consistent with Proffer Policies and Proffer Guidelines, the County will consider cash contributions when construction is not practicable. In order to address the potential that a proffered improvement may be constructed by others, a “cash-in-lieu” clause can be considered. The development community and the County maintain the flexibility to coordinate the timing and location of improvements between projects in response to changing needs and opportunities. Generally, the County will seek to have proffered improvements “up-front” or phased to address the impacts of the project prior to the resulting traffic coming on-line.

Dependence on proffers as a key instrument for the financing of transportation improvements can be problematic. When proffers for different components of a local system (for example, different segments of the same road) are offered by different developers, there can be no assurance that all of the segments will be built in a timely way so that the system will be fully functional when it is needed. To address these concerns, the County promotes coordination of improvements amongst developers through public/private road clubs, etc.

Proffer Policies – The following policies are subject to the overriding County Proffer Policies and Proffer Guidelines as set forth in Chapters 3 and 11 of the Revised General Plan. In its consideration and acceptance of all proffers, the County will apply the standards of Virginia Code Sections 15.2-2297, 15.2-2303, and 15.2-2303.4, as applicable, to evaluate the reasonableness of proffered conditions, and for those applications subject to Section 15.2-2303.4, the County shall accept only those proffers permitted or deemed reasonable under Virginia Code Section 15.2-2297 and not deemed unreasonable under Section 15.2-2303.4.

1. The County will actively seek transportation fund proffers, including those for roads, transit (including transit capital and route start-up costs), and bicycle and pedestrian facilities from residential and non-residential rezonings.
2. The County prefers proffers that provide physical transportation improvements, as warranted, in accordance with all applicable policies of the *Revised General Plan*. However, the County will consider cash contributions when construction is not practicable. A case-by-case analysis of the needs for road improvement construction and/or regional road contributions must be made for each project. The construction of full frontage improvements to existing roads and construction of planned new roads will be coordinated with each development project.
3. Private participation in the funding and/or development of the transportation system may include, but need not be limited to:
 - a. Access improvements beyond those required by the County *Land Subdivision and Development Ordinance* (LSDO);
 - b. Frontage improvements beyond those required by the LSDO;
 - c. Appropriate right-of-way for on-site roads not required by the LSDO;
 - d. Appropriate cross-section of a roadway to accommodate traffic beyond that generated by the project;



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- e. Regional improvements (on and off-site) and/or contribution to a regional road improvement trust fund, if needed;
 - f. Warrant studies and traffic signalization at intersections;
 - g. Development and improvement phasing;
 - h. Interparcel connections beyond those required by the LSDO;
 - i. Design and implementation of alternative mode transportation networks;
 - j. Sidewalks, pedestrian road crossings, bicycle trail; with accompanying public access easements and maintenance agreements for those sidewalks and/or trails constructed outside of the right of way;
 - k. Land acquisition or contributions toward eminent domain proceedings;
 - l. Routing and scheduling construction and industrial traffic to minimize impacts on adjoining areas;
 - m. Contributions towards abandonment/vacation of right-of-way proceedings;
 - n. Travel Demand Management measures; and
 - o. Traffic calming measures.
4. When a roadway running through a property is designed for capacity in excess of that needed for the project, and County Proffer Policies and Guidelines permit, the excess capacity will be credited toward anticipated regional transportation impact-mitigation measures.
 5. The transportation capacity to serve a project must be in service at the commencement of the project, or when phasing a project, the transportation capacity to serve each phase of the project must be in service at the commencement of that phase.
 6. Bicycle and pedestrian facilities along CTP roads will be provided at the commencement of a project, regardless of whether connections from adjacent properties are already in place.
 7. Transportation proffers will contain a “cash-in-lieu” trade-in clause that may be exercised by the County when 3rd parties actually construct a proffered road improvement. The value will be based on actual cost at the time the cash-in-lieu trade-in is exercised.
 8. When converting a constructed improvement to a “cash-in-lieu” contribution, the area in which those funds can be used will be determined by the Board of Supervisors but shall be located within the Policy Area in which the project is located. For projects located within the Suburban Policy Area, the area for which the “cash-in-lieu” contribution will be located will be further defined by the Suburban Community in which the project is located.
 9. Where appropriate, the County will combine proffer funding from two or more funding sources (i.e. “road club”) to provide expedited construction schedules for alternative transportation networks and road improvements.
 10. The County will value right-of-way dedications based on County pre-zoned assessment values at the time of the zoning map amendment application in accordance with Capital Facilities Proffer guidelines.
 11. Transportation improvements required by the LSDO or state regulations will not be accepted for transportation proffer credit except in accord with the Proffer Policies and Guidelines of the Revised General Plan.
 12. Where transportation proffers can be accepted in the form of a cash contribution to a regional road improvement trust fund, the appropriate amount of such contribution will be guided by an analysis of acceptable levels of service based on volume to capacity ratios, the projected costs of additional road



improvements, and projected funding levels throughout the plan horizon.



Chapter 9

Implementation

The *2010 CTP* is part of an ongoing local and regional process to provide transportation services. The policies of this Plan will serve as the basis for future planning efforts, while providing the criteria, objectives, and parameters for these future efforts. The Implementation Chapter provides an outline of some of the issues that should be addressed and future tasks that should be undertaken to fully implement the *2010 CTP*.

I. Implementation Recommendations

The *2010 CTP* does not provide the detailed engineering, funding mechanisms and specific planning and analysis ultimately required for its full implementation. Necessary implementation actions include corridor environmental impact and location studies, modifications to land use plans and ordinances, and interjurisdictional program development. Table 9-1 outlines major tasks that must be achieved as the County moves toward implementation of priority planned transportation projects.

Table 9-1
Implementation Recommendations

| Implementation Topic | Objectives | Implementation Task |
|---|---|--|
| A. OVERALL | | |
| Complete Streets | 1. Adequately provide for all roadway users, including bicyclists, pedestrians, transit riders and motorists. | 1. Utilize flexible design solutions that are sensitive to the function and context of the roadway and adjacent land uses. 2. Create a design tool catalog. 3. Require all roadway design projects to balance safety, mobility and accessibility for all users. |
| CTP Performance | 1. Track overall system performance to monitor impact of CTP transportation improvements. 2. Keep CTP current with respect to transportation industry practices and policies | 1. Develop and implement measures (e.g. collection and analysis of supplemental traffic and environmental data including volumes, delay, observed speeds, air quality, etc) that can be used to track the performance of the transportation network, particularly in priority areas as identified in Appendix 3. 2. Integrate advances in transportation planning methodologies (e.g. multi-modal LOS analysis) and review policies |
| Consistency of County Documents | 1. Align Facilities Standards Manual, Ordinances and other Comprehensive Plan components with updated CTP | 1. Compile and provide list of updates as necessary for incorporation into future updates of Facilities Standards Manual, County Ordinances and Comprehensive Plan components |
| Implementation of Priorities including Missing Road Network Links | 1. Complete critical projects including gaps in the road network that will have the greatest impact on the network and quality of life in the County. | 1. Expedite the completion of priority roadways including missing links as identified in Appendix 3. |
| Periodic Update of Recommended Planning Guidelines for Major Roadways Countywide (Appendix 1) | 1. Keep Appendix 1 current with respect to changes that may have occurred through CPAMs, corridor studies, development applications, or VDOT processes. | 1. Prepare an annual update of CTP Appendix 1. |
| Periodic Update of Improvement Priorities (Appendix 3) | 1. Keep Appendix 3 current with respect to changes in priorities and completion of priority projects | 1. Prepare an annual update of CTP Appendix 3. |



| Implementation Topic | Objectives | Implementation Task |
|---|--|---|
| B. MAJOR TRANSPORTATION CORRIDORS | | |
| Route 7: Algonkian Parkway/Atlantic Boulevard to Leesburg | <ol style="list-style-type: none"> 1. Convert to a limited access facility. 2. Expand use of public transit. 3. Consider an HOV/ Managed Lane network including the highway portion of Route 7. | <ol style="list-style-type: none"> 1. Design and construct planned interchanges and parallel roads and an 8-lane Route7. 2. Implement expanded transit services as called for in the Transit Plan. 3. Study the feasibility and benefits of an HOV/ Managed Lane network. |
| Route 7: East of Algonkian Parkway/Atlantic Boulevard | <ol style="list-style-type: none"> 1. Complete planned road network. 2. Protect local properties along Route 7. 3. Control traffic volumes and maximize functionality on Route 7 4. Expand use of public transit. 5. Improve pedestrian and bicycle connections across Route 7 (between Fairfax County line and Algonkian Parkway/Atlantic Boulevard) | <ol style="list-style-type: none"> 1. Design and construct the missing link of the northern collector road. 2. Support the continued evaluation of noise abatement along existing residential neighborhoods, including but not limited to passive noise abatement measures such as earthen berms, wooden fences, and dense tree vegetation, to be done through a variety of funding techniques (e.g., SAFETEA-LU). 3. Implement access management and other recommendations of the Route 7 Operations Improvement Project. 4. Implement expanded transit services as called for in the Transit Plan. 5. Design and construct bicycle and pedestrian crossings across Route 7 |
| Route 7: Between Leesburg and Route 9 | <ol style="list-style-type: none"> 1. Convert to a limited access facility, including local service roads and new interchange at White Gate Place. | <ol style="list-style-type: none"> 1. Design and construct an 8-lane Route 7 and the White Gate Place interchange. |
| Route 9 | <ol style="list-style-type: none"> 1. Improve safety levels along the existing corridor. 2. Improve capacity of Clarkes Gap Road and Route 7. | <ol style="list-style-type: none"> 1. Develop and implement a Route 9 Corridor Plan and Safety Improvement Program. Consider traffic calming similar to Route 50. 2. Design and construct a 4-lane Route 9 between Clarkes Gap Road and Route 7. |
| Route 28: Route 7 to Fairfax County | <ol style="list-style-type: none"> 1. Convert to a limited access facility. 2. Provide capacity for forecast demand. 3. Expand use of public transit. 4. Consider expansion of capacity in the corridor in concert with HOV/managed lane operation. | <ol style="list-style-type: none"> 1. Design and construct planned interchanges and parallel roads (identify funding for missing links on parallel roads). 2. Design and construct an 8-lane Route 28 from Sterling Boulevard to the Fairfax County line (identify funding for expansion to 8 lanes from Route7 to Sterling Boulevard and to 10 lanes from Route 606 to the Fairfax County line). 3. Implement expanded transit services as called for in the Transit Plan. 4. Study the feasibility and benefits of an HOV/ Managed Lane network. |
| Route 15: North and South of Leesburg | <ol style="list-style-type: none"> 1. Improve safety levels along the existing corridor. 2. Protect/enhance roadside visual aspects. 3. Provide capacity for forecast demand. | <ol style="list-style-type: none"> 1. Complete Route 15 Corridor Safety Program and other spot improvements. 2. Support the implementation of the Journey Through Hallowed Ground program. 3. Widen Route 15 to four lanes between Town limits and Harmony Church Road. |
| Dulles Greenway | <ol style="list-style-type: none"> 1. Complete planned road network including Greenway interchanges. 2. Provide capacity for forecast demand. 3. Expand use of public transit. 4. Consider expansion of capacity on the Greenway in concert with HOV/ Managed lane operation. 5. Enhance utility to users making local trips. | <ol style="list-style-type: none"> 1. Design and construct planned interchange improvements and road connections. 2. Design and construct 8-lane Greenway. 3. Implement expanded transit services as called for in the Transit Plan. 4. Study the feasibility and benefits of an HOV/ Managed Lane network. 5. Advocate graduated toll structure to TRIP II (Greenway Ownership) and SCC. |



| Implementation Topic | Objectives | Implementation Task |
|--|--|---|
| Route 50 East of North Star Boulevard to Fairfax County | <ol style="list-style-type: none"> 1. Convert to a limited access facility. 2. Consider HOV/Managed lane operation. | <ol style="list-style-type: none"> 1. Design and construct planned interchanges and parallel roads. 2. Study the feasibility and benefits of an HOV/Managed Lane network. |
| Dulles Loop: Route 606/Loudoun County Parkway /Route 50/Route 28 | <ol style="list-style-type: none"> 1. Provide a controlled or limited access highway along Dulles Airport property. 2. Consider expansion of capacity on Route 606/Loudoun County Parkway in concert with HOV/Managed lane operation. | <ol style="list-style-type: none"> 1. Study the feasibility of interchanges and access limitation along Route 606 and/or Loudoun County Parkway from Route 50 to Route 28 to form an integrated controlled/limited access loop around Dulles Airport. 2. Study the feasibility and benefits of an HOV/Managed Lane network. |
| Waxpool Road | <ol style="list-style-type: none"> 1. Provide near-term operational improvements to relieve congested corridor until network build-out is achieved | <ol style="list-style-type: none"> 1. Expedite implementation of VDOT recommendations for Waxpool Road corridor to improve operational efficiency |
| C. REGIONAL/STATE/LOCAL COORDINATION | | |
| Leesburg Area Bypass Route 7/15 | <ol style="list-style-type: none"> 1. Increase capacity of the Bypass and improve safety. | <ol style="list-style-type: none"> 1. Work with the Town of Leesburg and VDOT to complete planning and engineering of bypass improvements to include design and construction of a 6-lane bypass from West Market Street to North King Street. |
| Town Coordination | <ol style="list-style-type: none"> 1. Coordinate with Towns as necessary for planned road improvements and transit access. | <ol style="list-style-type: none"> 1. Work with the Towns and VDOT to prepare preliminary engineering studies to provide sufficient information for planned roads to estimate costs, negotiate development proffers, and for other purposes. Coordinate transit services in accordance with the Transit Plan. |
| Regional Coordination | <ol style="list-style-type: none"> 1. Ensure the County's interests are addressed in regional and statewide plans and facilitate cooperation between jurisdictions. | <ol style="list-style-type: none"> 1. Coordinate between the Board's Transportation/Land Use Committee, the Planning Commission, and the staff to identify priority objectives and strategies to focus County efforts in working with regional agencies. Develop in coordination with the preparation of the County's legislative agenda. 2. Coordinate with state plans for regional facilities. |
| D. NEIGHBORHOOD ISSUES | | |
| Neighborhood "Cut Through" Traffic | <ol style="list-style-type: none"> 1. Minimize commuter traffic on local streets by providing alternative routes around the periphery of the neighborhoods. 2. Coordinate the implementation of traffic-control measures (e.g., stop signs) to discourage "cut-through" traffic. Develop appropriate traffic-calming techniques. 3. Discourage road improvement projects that may direct commuter traffic into residential neighborhoods. | <ol style="list-style-type: none"> 1. Complete collector roads such as Davis Drive, and Claiborne Parkway. 2. Complete a broad analysis of "cut-through" traffic problems and identify how such problems can be reduced through appropriate techniques including traffic calming. |
| Traffic Calming | <ol style="list-style-type: none"> 1. Increase safety for drivers and pedestrians. | <ol style="list-style-type: none"> 1. Promote and evaluate traffic calming techniques in all policy areas of the County and develop an implementation program. |
| Traffic Noise Abatement | <ol style="list-style-type: none"> 1. Ensure noise-sensitive uses are protected from excessive road noise. | <ol style="list-style-type: none"> 1. Adopt an amendment to the Zoning Ordinance designed to mitigate excessive road noise. |
| E. TRANSIT | | |
| Transit Routes | <ol style="list-style-type: none"> 1. Expand transit services that are responsive to growth, congestion and air quality demands on the region | <ol style="list-style-type: none"> 1. Implement modified and expanded transit service routes according to route recommendations in Table 3-2. |
| Dulles Metrorail | <ol style="list-style-type: none"> 1. Bring rail transit service to Loudoun County | <ol style="list-style-type: none"> 1. Facilitate the implementation of rail service in the Dulles Corridor |



| Implementation Topic | Objectives | Implementation Task |
|---|--|--|
| Transportation Demand Management Strategies | 1. Reduce vehicle trips and vehicle miles traveled | 1. Implement the TDM requirements for both residential and non-residential development |
| Infrastructure | 1. Ensure adequate park and ride lot capacity is available | 1. Locate, design and construct park and ride lots per Table 3-4 recommendations. |
| Public Outreach | 1. Increase awareness of commuting options available to residents, employees and visitors | 1. Promote commuting options with outreach efforts that may include marketing, transportation fairs, employer-based presentations, transit workshops and printed materials |
| F. BICYCLE AND PEDESTRIAN ACCOMMODATIONS | | |
| Implement Bicycle and Pedestrian Mobility Master Plan | 1. Ensure bicycle and pedestrian accommodations are integrated into the road network. | <div>1. Use the 2010 CTP and the Loudoun County Bicycle and Pedestrian Mobility Master Plan in the review of all development applications and ensure that these facilities are included in all scoping, planning, design, and construction plans.</div> <div>2. Create a bicycle and pedestrian facilities map detailing the location of existing and approved facilities. Integrate bicycle and pedestrian facilities into the road network.</div> |
| G. OTHER | | |
| Rural/Historic Roads | 1. Preserve the rural and historic character of roads through documented heritage areas, entrance corridors to historic districts and context-sensitive designs. | <div>1. Designate Route 50 as either an Historic Access Corridor or Historic Roadway District and Route 626 as an Historic Access Corridor.</div> <div>2. Work with the Town of Leesburg to designate Edwards Ferry Road from Battlefield Parkway east to River Creek Parkway as a Historic Access Corridor.</div> <div>3. Work with VDOT to find low-impact, case-by-case design solutions to solve traffic calming and safety issues in unique and sensitive environments.</div> |

Appendix 1

Planning Guidelines for Major Roadways

Countywide

I. Introduction

The purpose of this appendix is to provide County staff, the development community and the general public with a guide for the planning, design, and coordination of improvements to the major roadways within Loudoun County. The County understands that in order for the actual roadway improvement or construction to be accepted into the state system, VDOT must approve the roadway design; therefore, VDOT standards must be utilized in conjunction with these guidelines. If any differences occur between this document and the adopted transportation maps, the maps govern.

For each roadway or roadway segment, there may be up to three phasing conditions: existing, interim, and ultimate. Roadway segments are listed in numerical order by VDOT route number. Where no VDOT route number has been assigned, roadway segments are listed alphabetically. The conditions are not linked to a specific implementation schedule or time horizon (i.e., 10, 20, or more years). The following components are outlined in each condition for each roadway segment:

1. The **SEGMENT** represents the location and end points for the route or portion of the route in question (i.e., for Route 7—Fairfax County Line west to the Algonkian Parkway/Atlantic Boulevard interchange). The segment remains the same for each condition, unless specified otherwise.
2. The **POLICY AREA** identifies the distinct geographic policy areas, as defined in the Revised General Plan, in which the segment of the route in question is located. In the Suburban Policy Area, the specific community or communities (i.e., Ashburn, Dulles, Potomac and Sterling) are also noted. A route may traverse more than one policy area. Incorporated towns through which a road segment passes are also noted. Each policy area has a preferred development pattern that is distinct and that will determine the location of public infrastructure and facilities. Chapter 2 of the CTP details the road policies that apply to each policy area.
3. The **FUNCTIONAL CLASSIFICATION** of each roadway segment ranges from local/secondary to principal arterial. The functional classification for the existing roadways is consistent with the current VDOT classification system. The classification for the planned roadways expands upon the VDOT classification system. The range and definitions of the functional classifications are provided in the Glossary within this document
4. The total **NUMBER OF LANES** and **RIGHT-OF-WAY (ROW)** are identified for each roadway segment (e.g., four lanes/120 foot ROW). Additional ROW may be required for interchanges, turn lanes, and/or bicycle and pedestrian facilities.
5. A **DESCRIPTION** of the roadway segment includes the typical cross-section (undivided vs. divided and curb vs. shoulder and ditch), design speed, and for future conditions, other additional improvements (i.e., turn lanes and interchanges).
6. **BICYCLE/PEDESTRIAN FACILITIES** planning guidelines are provided in Appendix 6

The ultimate condition for each roadway or roadway segment stated in this document is foreseen by the

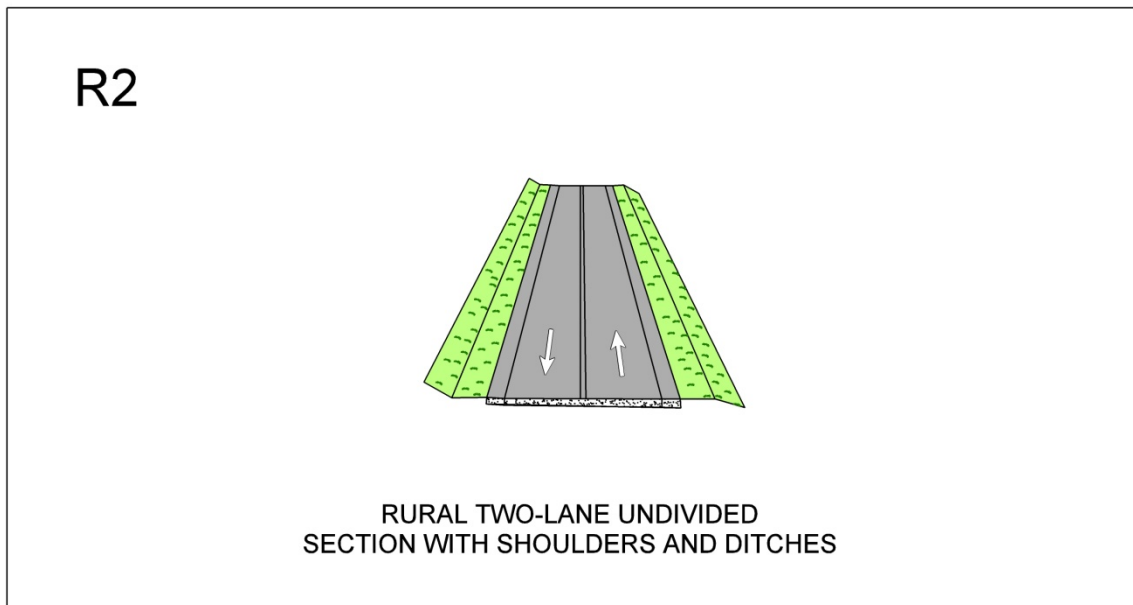
County as the final condition. Also, the ultimate condition may include roadway link improvements, such as increasing the number of lanes, and intersection improvements, such as turn lanes and/or interchanges. These improvements may or may not occur at the same time. For new road construction on new alignments, construction of the four outside lanes in the interim condition will be required in the design of ultimate U6M and U8M roads. The planning guidelines are not intended to propose roadway improvements within the incorporated towns beyond those identified in the town plans.

II. Road Type Descriptions, Typical Sections and Planning Guidelines

ROAD TYPE DESCRIPTIONS

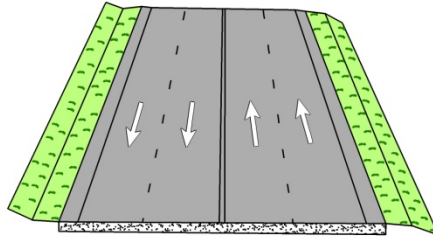
| | |
|---------------|---|
| R2 | Rural two-lane undivided section with shoulder and ditch |
| U2 | Urban two-lane undivided section with curb and gutter |
| U3 | Urban three-lane undivided section with curb and gutter (limited use) |
| R4 | Rural four-lane undivided section with shoulder and ditch |
| U4 | Urban four-lane undivided section with curb and gutter |
| R4M | Rural four-lane median divided section with shoulder and ditch |
| U4M | Urban four-lane median divided section with curb and gutter |
| R6M | Rural six-lane median divided section with shoulder and ditch |
| U6M/F | Urban six-lane median divided section with curb and gutter/Urban six-lane freeway |
| U8M/F | Urban eight-lane median divided section with curb and gutter/Urban eight-lane freeway |
| U10M/F | Urban ten-lane median divided section with curb and gutter/Urban ten-lane freeway |
| ROW | Right-of-Way |

TYPICAL CROSS-SECTIONS



Note: Provisions for bicycle and pedestrian accommodations will vary depending on the type of facility and location; refer to Appendix 6 for planning guidelines for bicycle and pedestrian facilities.

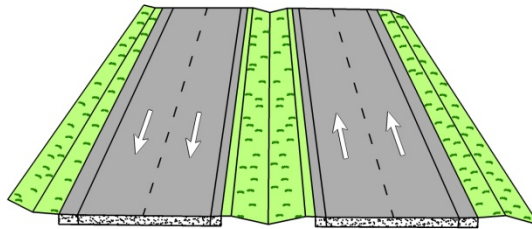
R4



**RURAL FOUR-LANE UNDIVIDED
SECTION WITH SHOULDERS AND DITCHES**

Note: Provisions for bicycle and pedestrian accommodations will vary depending on the type of facility and location; refer to Appendix 6 for planning guidelines for bicycle and pedestrian facilities.

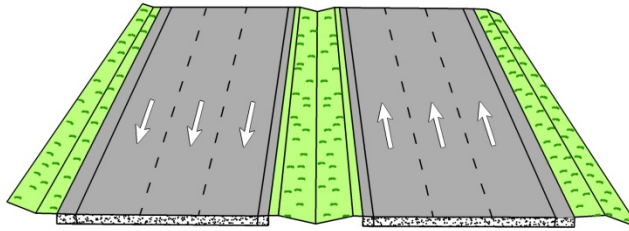
R4M



**RURAL FOUR-LANE MEDIAN DIVIDED
SECTION WITH SHOULDERS AND DITCHES**

Note: Provisions for bicycle and pedestrian accommodations will vary depending on the type of facility and location; refer to Appendix 6 for planning guidelines for bicycle and pedestrian facilities.

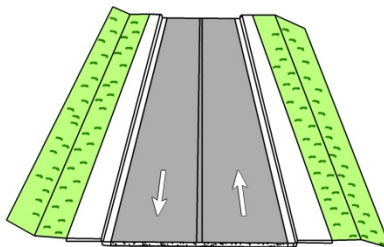
R6M



RURAL SIX-LANE MEDIAN DIVIDED
SECTION WITH SHOULDERS AND DITCHES

Note: Provisions for bicycle and pedestrian accommodations will vary depending on the type of facility and location; refer to Appendix 6 for planning guidelines for bicycle and pedestrian facilities.

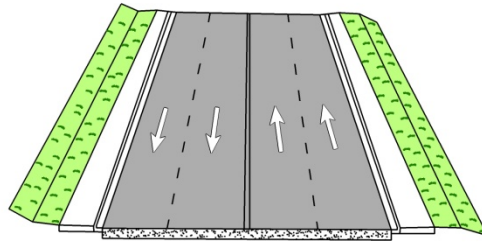
U2



URBAN TWO-LANE UNDIVIDED
SECTION WITH CURB AND GUTTER

Note: Provisions for bicycle and pedestrian accommodations will vary depending on the type of facility and location; refer to Appendix 6 for planning guidelines for bicycle and pedestrian facilities.

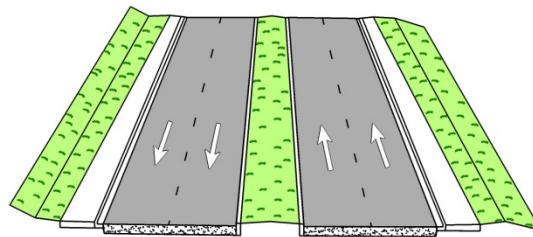
U4



URBAN FOUR-LANE UNDIVIDED
SECTION WITH CURB AND GUTTER

Note: Provisions for bicycle and pedestrian accommodations will vary depending on the type of facility and location; refer to Appendix 6 for planning guidelines for bicycle and pedestrian facilities.

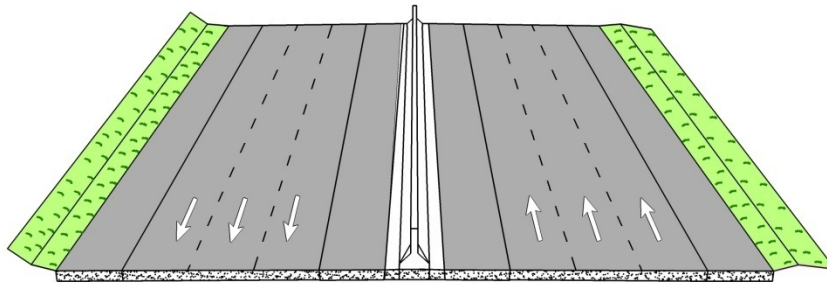
U4M



URBAN FOUR-LANE MEDIAN DIVIDED
SECTION WITH CURB AND GUTTER

Note: Provisions for bicycle and pedestrian accommodations will vary depending on the type of facility and location; refer to Appendix 6 for planning guidelines for bicycle and pedestrian facilities.

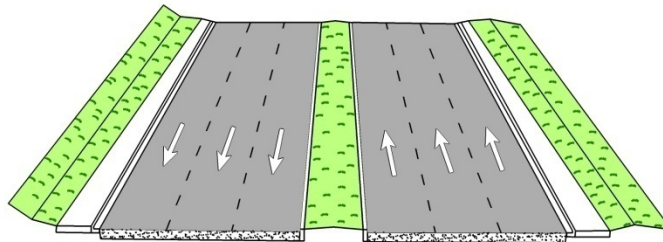
U6F



**URBAN FREEWAY SIX-LANE CONCRETE BARRIER
DIVIDED SECTION WITH SHOULDERS AND DITCHES**

Note: Provisions for bicycle and pedestrian accommodations will vary depending on the type of facility and location; refer to Appendix 6 for planning guidelines for bicycle and pedestrian facilities.

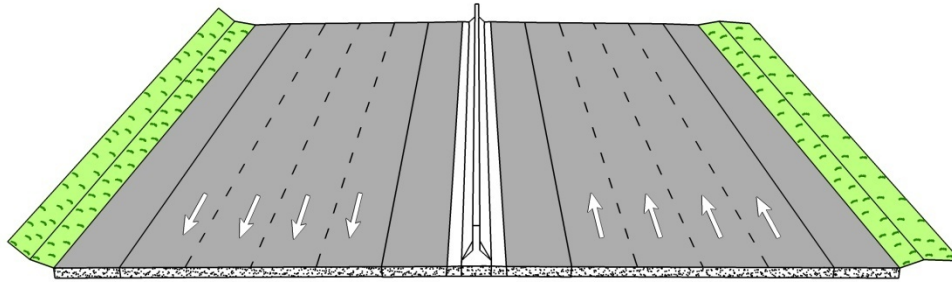
U6M



**URBAN SIX-LANE MEDIAN DIVIDED
SECTION WITH CURB AND GUTTER**

Note: Provisions for bicycle and pedestrian accommodations will vary depending on the type of facility and location; refer to Appendix 6 for planning guidelines for bicycle and pedestrian facilities.

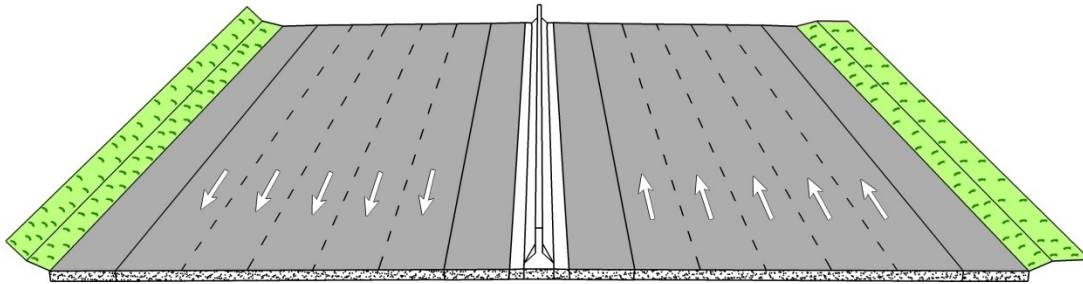
U8F



**URBAN FREEWAY EIGHT-LANE CONCRETE BARRIER
DIVIDED SECTION WITH SHOULDERS AND DITCHES**

***Note:** Provisions for bicycle and pedestrian accommodations will vary depending on the type of facility and location; refer to Appendix 6 for planning guidelines for bicycle and pedestrian facilities.*

U10F



**URBAN FREEWAY TEN-LANE CONCRETE BARRIER
DIVIDED SECTION WITH SHOULDERS AND DITCHES**

***Note:** Provisions for bicycle and pedestrian accommodations will vary depending on the type of facility and location; refer to Appendix 6 for planning guidelines for bicycle and pedestrian facilities.*

Primary Roads

1. VA Route 7 - Harry Byrd Highway

| | |
|---------|--|
| Segment | Fairfax County Line west to VA Route 1582 (Algonkian Parkway)/VA Route 1902 (Atlantic Boulevard) interchange |
|---------|--|

| | |
|-------------|------------------------------|
| Policy Area | Suburban (Potomac, Sterling) |
|-------------|------------------------------|

Existing Condition

| | |
|------------------|--------------------|
| Functional Class | Principal Arterial |
|------------------|--------------------|

| | |
|--------------------|----------|
| Lanes/Right of Way | 6/Varies |
|--------------------|----------|

| | |
|-------------|---|
| Description | U6M. Local access median divided urban arterial. Grade-separated interchanges at VA Route 1794 (Cascades Parkway) and VA Route 1582 (Algonkian Parkway)/VA Route 1902 (Atlantic Boulevard). Individual site access occurs along segment. Design speed varies. |
|-------------|---|

Ultimate Condition

| | |
|------------------|--------------------|
| Functional Class | Principal Arterial |
|------------------|--------------------|

| | |
|--------------------|--|
| Lanes/Right of Way | 6/ROW subject to DTCI Review – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities |
|--------------------|--|

| | |
|-------------|---|
| Description | U6M. Controlled access median divided urban arterial. Grade-separated interchanges at VA Route 1794 (Cascades Parkway) and VA Route 1582 (Algonkian Parkway)/VA Route 1902 (Atlantic Boulevard). Individual site access will be terminated. Median crossovers will not increase from Existing Condition. Left and right turn lanes required at all intersections. Design speed determined by VDOT and DTCI. |
|-------------|---|

| | |
|-------------------------------|---|
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. |
|-------------------------------|---|

2. VA Route 7 - Harry Byrd Highway / East Market Street

| | |
|---------|---|
| Segment | VA Route 1582 (Algonkian Parkway)/VA Route 1902 (Atlantic Boulevard) interchange west to VA Route 7/US Route 15 (Leesburg Bypass) interchange |
|---------|---|

| | |
|--------------|--|
| Policy Areas | Suburban (Potomac, Sterling, Ashburn), Leesburg JLMA, Town of Leesburg |
|--------------|--|

Existing Condition

| | |
|------------------|--------------------|
| Functional Class | Principal Arterial |
|------------------|--------------------|

| | |
|--------------------|----------|
| Lanes/Right of Way | 6/Varies |
|--------------------|----------|

| | |
|-------------|---|
| Description | U6M. Controlled access median divided urban arterial. Grade-separated interchanges at VA Route 1582 (Algonkian Parkway)/VA Route 1902 (Atlantic Boulevard), VA Route 28 (Sully Road), VA Route 607 (Loudoun County Parkway), VA Route 901 (Claiborne Parkway)/VA Route 2400 (Lansdowne Boulevard), VA Route 653 Relocated |
|-------------|---|

(Crosstrail Boulevard)/VA Route 773 (River Creek Parkway), and VA Route 7/US Route 15 (Leesburg Bypass). Design speed varies.

Ultimate Condition

| | |
|-------------------------------|---|
| Functional Class | Principal Arterial |
| Lanes/Right of Way | 8/200 feet – Additional ROW may be needed for interchange(s) |
| Description | U8M. Limited access median divided urban arterial. Additional grade-separated interchanges beyond Existing Condition at VA Route 2020 (Ashburn Village Boulevard), VA Route 659 (Belmont Ridge Road) and Battlefield Parkway. All at-grade access is terminated. Study of alternative uses (e.g., HOV, bus lanes) to be considered for segment between VA Route 28 (Sully Road) and VA Route 7/US Route 15 (Leesburg Bypass) when facility is expanded to Ultimate Condition. Design speed determined by VDOT, Town of Leesburg and DTCL. |
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. |

3. VA Route 7 - Harry Byrd Highway

| | |
|--------------|---|
| Segment | VA Route 7 Business (West Market Street) interchange west to VA Route 9 (Charles Town Pike) interchange |
| Policy Areas | Town of Leesburg, Rural |

Existing Condition

| | |
|--------------------|---|
| Functional Class | Principal Arterial |
| Lanes/Right of Way | 4/200 feet |
| Description | R4M. Controlled access median divided rural arterial. Grade-separated interchanges at VA Route 7 Business (West Market Street) and VA Route 9 (Charles Town Pike). Design speed varies. |

Ultimate Condition

| | |
|-------------------------------|---|
| Functional Class | Principal Arterial |
| Lanes/Right of Way | 8/200 feet – Additional ROW may be required for interchange(s) |
| Description | R8M. Limited access median divided rural arterial. Additional grade-separated interchange beyond Existing Condition at White Gate Place. All at-grade access is terminated. Design speed determined by VDOT and DTCL. |
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. |

4. VA Route 7 Bypass - Harry Byrd Highway

| | |
|---------|--|
| Segment | VA Route 9 (Charles Town Pike) interchange west to VA Route 7 Business (West Loudoun Street) intersection (west of Round Hill) |
|---------|--|

| | |
|-------------------------------|---|
| Policy Areas | Rural, Purcellville JLMA, Town of Purcellville, Round Hill JLMA, Town of Round Hill |
| Existing Condition | |
| Functional Class | Principal Arterial |
| Lanes/Right of Way | 4/200 feet |
| Description | R4M. Limited access median divided rural arterial. Grade-separated interchanges at VA Route 9 (Charles Town Pike), VA Route 704 (Hamilton Station Road), VA Route 287 (Berlin Turnpike), and VA Route 7 Business (East Loudoun Street) (east of Round Hill). Design speed varies. |
| Ultimate Condition | |
| Functional Class | Principal Arterial |
| Lanes/Right of Way | 6/200 feet – Additional ROW may be needed for interchange(s) |
| Description | R6M. Limited access median divided rural arterial. Additional grade-separated interchanges beyond Existing Condition at VA Route 690 (Hillsboro Road) and west of Round Hill at VA Route 7 Business (West Loudoun Street)/VA Route 1320 (Evening Star Drive). Location of the VA Route 690 interchange to be determined by further study and in consultation with the Town of Purcellville and VDOT. Location of the western Round Hill interchange and six-lane transition to be determined by further study and in consultation with the Town of Round Hill and VDOT. Design speed determined by VDOT and DTCL. |
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. |

5. VA Route 7 - Harry Byrd Highway

| | |
|---------------------------|--|
| Segment | VA Route 7 Business (West Loudoun Street) intersection (west of Round Hill) west to Clarke County Line |
| Policy Areas | Round Hill JLMA, Rural |
| Existing Condition | |
| Functional Class | Principal Arterial |
| Lanes/Right of Way | 4/200 feet |
| Description | R4M. Controlled access median divided rural arterial. Design speed varies. |
| Ultimate Condition | |
| Functional Class | Principal Arterial |
| Lanes/Right of Way | 4/200 feet – Additional ROW may be needed interchange(s), turn lanes and bicycle/pedestrian facilities |

| | |
|-------------------------------|---|
| Description | R4M. Controlled access median divided rural arterial. Grade-separated interchange west of Round Hill at VA Route 7 Business (West Loudoun Street)/VA Route 1320 (Evening Star Drive). Location of the western Round Hill interchange to be determined by further study and in consultation with the Town of Round Hill and VDOT. Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. Design speed determined by VDOT and DTCI. |
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. |

6. VA Route 7 Business - East Colonial Highway (Clarkes Gap to Hamilton)

| | |
|--------------|--|
| Segment | VA Route 9 (Charles Town Pike) at VA Route 7 Bypass west to VA Route 704 (Hamilton Station Road) |
| Policy Areas | Rural, Hamilton JLMA |

Existing/Ultimate Condition

| | |
|-------------------------------|---|
| Functional Class | Major Collector/Virginia Byway |
| Lanes/Right of Way | 2/Varies – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities |
| Description | R2. Local access undivided rural collector. Grade-separated interchange at VA Route 7 Bypass. In Rural Policy Area, left and right turn lanes provided where required for safety. In JLMA, left and right turn lanes recommended at major intersections. Design speed varies. Any improvements will be constructed in conformance with the Heritage Resource Policies of the CTP and the Scenic Areas and Corridor Policies of the Revised General Plan and the Heritage Preservation Plan. |
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. |

7. VA Route 7 Business - East Colonial Highway / West Colonial Highway / East Main Street / West Main Street (Hamilton to Purcellville)

| | |
|--------------|--|
| Segment | VA Route 704 (Hamilton Station Road) west to VA Route 690 (32nd Street South/Silcott Springs Road) |
| Policy Areas | Hamilton JMLA, Town of Hamilton, Purcellville JLMA, Town of Purcellville |

Existing/Ultimate Condition

| | |
|--------------------|---|
| Functional Class | Major Collector/Virginia Byway east of VA Route 287 (Berlin Turnpike) |
| Lanes/Right of Way | 2/Varies – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities. Ultimate ROW width within Town of Hamilton and Town of Purcellville determined by respective Town. |
| Description | U2. Local access undivided urban collector. Roundabout at VA Route 287 (Berlin Turnpike) / Purcellville South Collector Road (“A” Street). Left and right turn lanes recommended at major intersections. Design |

speed varies. Any improvements along the portion of this segment designated as a Virginia Byway will be constructed in conformance with the Heritage Resource Policies of the CTP and the Scenic Areas and Corridor Policies of the Revised General Plan and the Heritage Preservation Plan.

| | |
|-------------------------------|--|
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements; bicycle and pedestrian facilities within the Town of Hamilton and Town of Purcellville subject to Town review. |
|-------------------------------|--|

8. VA Route 7 Business - West Main Street / East Loudoun Street (Purcellville to Round Hill)

| | |
|---------|--|
| Segment | VA Route 690 (32nd Street South/Silcott Springs Road) west to VA Route 7 Bypass interchange (east of Round Hill) |
|---------|--|

| | |
|--------------|--|
| Policy Areas | Town of Purcellville, Rural, Round Hill JLMA |
|--------------|--|

Existing/Ultimate Condition

| | |
|------------------|-----------------|
| Functional Class | Major Collector |
|------------------|-----------------|

| | |
|--------------------|--|
| Lanes/Right of Way | 2/Varies – Additional ROW may be needed for turn lanes. Ultimate ROW width within Town of Purcellville determined by Town. |
|--------------------|--|

| | |
|-------------|--|
| Description | R2. Local access undivided rural collector. Grade-separated interchange at VA Route 7 Bypass (east of Round Hill). In Town and JLMA, left and right turn lanes recommended at major intersections. In Rural Policy Area, left and right turn lanes where required for safety. Design speed varies. |
|-------------|--|

| | |
|-------------------------------|---|
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements; bicycle and pedestrian facilities within the Town of Purcellville subject to Town review. |
|-------------------------------|---|

9. VA Route 7 Business - East Loudoun Street / West Loudoun Street (Round Hill)

| | |
|---------|--|
| Segment | VA Route 7 Bypass interchange (east of Round Hill) west to VA Route 7 Bypass intersection (west of Round Hill) |
|---------|--|

| | |
|-------------|-------------------------------------|
| Policy Area | Town of Round Hill, Round Hill JLMA |
|-------------|-------------------------------------|

Existing Condition

| | |
|------------------|-----------------|
| Functional Class | Major Collector |
|------------------|-----------------|

| | |
|--------------------|----------|
| Lanes/Right of Way | 2/Varies |
|--------------------|----------|

| | |
|-------------|---|
| Description | U2. Local access undivided urban collector. Grade-separated interchange at VA Route 7 Bypass (east of Round Hill). Design speed varies. |
|-------------|---|

Ultimate Condition

| | |
|------------------|-----------------|
| Functional Class | Major Collector |
|------------------|-----------------|

| | |
|-------------------------------|--|
| Lanes/Right of Way | 2/ROW subject to DTCI review – Additional ROW may be needed for interchange(s), turn lanes and bicycle/pedestrian facilities. ROW width within Town of Round Hill determined by Town. |
| Description | U2. Local access undivided urban collector. Additional grade-separated interchange beyond Existing Condition at VA Route 7 Bypass/Evening Star Drive (west of Round Hill). Location of the western Round Hill interchange to be determined by further study and in consultation with the Town of Round Hill. Left and right turn lanes recommended at major intersections. Design speed determined by VDOT, Town of Round Hill and DTCI. |
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements; bicycle and pedestrian facilities within the Town of Round Hill subject to Town review. |

10. VA Route 7 - Leesburg Bypass

| | |
|-------------|---|
| Segment | VA Route 267 (Dulles Greenway) interchange west and north to VA Route 7 Business (West Market Street) interchange |
| Policy Area | Town of Leesburg |

Existing Condition

| | |
|--------------------|--|
| Functional Class | Principal Arterial |
| Lanes/Right of Way | 4/200 feet |
| Description | R4M. Limited access median divided rural arterial. Grade-separated interchanges at VA Route 267 (Dulles Greenway), US Route 15 (South King Street), and VA Route 7 Business (West Market Street). Design speed varies. |

Ultimate Condition

| | |
|-------------------------------|---|
| Functional Class | Principal Arterial |
| Lanes/Right of Way | 6/200 feet |
| Description | U6M. Limited access median divided urban arterial. Grade-separated interchanges at VA Route 267 (Dulles Greenway), US Route 15 (South King Street), and VA Route 7 Business (West Market Street). Design speed determined by VDOT and Town of Leesburg. |
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements; bicycle and pedestrian facilities subject to Town of Leesburg review. |

11. VA Route 9 - Charles Town Pike

| | |
|--------------|--|
| Segment | West Virginia State Line east to VA Route 7 Bypass |
| Policy Areas | Rural, Town of Hillsboro |

Existing Condition

| | |
|--------------------|---|
| Functional Class | Minor Arterial/Virginia Byway |
| Lanes/Right of Way | 2/Varies |
| Description | R2. Local access undivided rural arterial. Grade-separated interchange at VA Route 7 Bypass. Design speed varies. |

Ultimate Condition

| | |
|-------------------------------|---|
| Functional Class | Minor Arterial/Virginia Byway |
| Lanes/Right of Way | 2/ROW subject to DTCl review – Additional ROW may be needed for turn lanes. ROW width within Town of Hillsboro determined by Town. |
| Description | R2. Local access undivided rural arterial. Grade-separated interchange at VA Route 7 Bypass. Roundabouts at VA Route 719 (Stony Point Road) and VA Route 690 (Hillsboro Road). Left and right turn lanes provided where required for safety. Design speed determined by VDOT, Town of Hillsboro and DTCl. Improvements will be constructed in conformance with the Heritage Resource Policies of the CTP and the Scenic Areas and Corridor Policies of the Revised General Plan and the Heritage Preservation Plan. |
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements; bicycle and pedestrian facilities within the Town of Hillsboro subject to Town review. |

12. VA Route 7/US Route 15 - Leesburg Bypass

| | |
|-------------|--|
| Segment | VA Route 7 (East Market Street) interchange south and west to VA Route 267 (Dulles Greenway) interchange |
| Policy Area | Town of Leesburg |

Existing Condition

| | |
|--------------------|---|
| Functional Class | Principal Arterial |
| Lanes/Right of Way | 4/200 feet |
| Description | R4M. Controlled access median divided rural arterial. Grade-separated interchanges at VA Route 7 (East Market Street) and at VA Route 267 (Dulles Greenway). Left and right turn lanes at Sycolin Road intersection. Design speed varies. |

Ultimate Condition

| | |
|--------------------|---|
| Functional Class | Principal Arterial |
| Lanes/Right of Way | 6/200 feet |
| Description | U6M. Limited access median divided urban arterial. Grade-separated interchanges at VA Route 7 (East Market Street) and at VA Route 267 (Dulles Greenway). Sycolin Road to cross over the bypass; existing intersection/at-grade access to/from Sycolin Road terminated. Design speed determined by VDOT and Town of Leesburg. |

| | |
|-------------------------------|---|
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements; bicycle and pedestrian facilities subject to Town of Leesburg review. |
|-------------------------------|---|

13. US Route 15 - Leesburg Bypass

| | |
|-------------|--|
| Segment | VA Route 7 (East Market Street) interchange north to Battlefield Parkway |
| Policy Area | Town of Leesburg |

Existing Condition

| | |
|-------------------------------|--|
| Functional Class | Principal Arterial |
| Lanes/Right of Way | 4/200 feet – Additional ROW may be needed for turn lanes |
| Description | R4M. Controlled access median divided rural arterial. Grade-separated interchange at VA Route 7 (East Market Street). Design speed varies. |
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. |

Ultimate Condition

| | |
|-------------------------------|--|
| Functional Class | Principal Arterial |
| Lanes/Right of Way | 4/200 feet – Additional ROW may be required for interchange(s) |
| Description | U4M. Limited access median divided urban arterial. Additional grade-separated interchanges beyond Existing Condition at Edwards Ferry Road and Battlefield Parkway. All existing at-grade access terminated. Design speed determined by VDOT and Town of Leesburg. |
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements; bicycle and pedestrian facilities subject to Town of Leesburg review. |

14. US Route 15 - Leesburg Bypass

| | |
|--------------|---|
| Segment | Battlefield Parkway north to US Route 15 Business (North King Street) |
| Policy Areas | Town of Leesburg, Rural |

Existing Condition

| | |
|--------------------|--|
| Functional Class | Principal Arterial |
| Lanes/Right of Way | 2-4/200 feet |
| Description | R2/R4M. Controlled access undivided and divided rural arterial. Design speed varies. |

Ultimate Condition

| | |
|--------------------|--|
| Functional Class | Principal Arterial |
| Lanes/Right of Way | 4/200 feet – Additional ROW may be needed for interchange(s) |

| | |
|-------------------------------|---|
| Description | U4M. Limited access median divided urban arterial. Grade-separated interchange at Battlefield Parkway. Grade-separated and/or rotary options to be explored at US Route 15 Business (North King Street) by later study. All other at-grade access terminated. Design speed determined by VDOT, Town of Leesburg and DTCl. |
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements; bicycle and pedestrian facilities within the Town of Leesburg subject to Town review. |

15. US Route 15 - James Monroe Highway

| | |
|------------------------------------|---|
| Segment | Prince William County Line north to VA Route 704 (Harmony Church Road) |
| Policy Area | Rural |
| Existing/Ultimate Condition | |
| Functional Class | Minor Arterial/Virginia Byway |
| Lanes/Right of Way | 2/Varies – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities |
| Description | R2. Local access undivided rural arterial. Traffic calming measures implemented in accordance with the US Route 50 Traffic Calming Project. Roundabouts at the US Route 15/50 Connector (Howzers Branch Drive) and at US Route 50 (John Mosby Highway). Left and right turn lanes provided where required for safety. Design speed determined by VDOT and DTCl. Improvements will be constructed in conformance with the Heritage Resource Policies of the CTP and the Scenic Areas and Corridor Policies of the Revised General Plan and the Heritage Preservation Plan. |
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. |

16. US Route 15 – James Monroe Highway / South King Street

| | |
|---------------------------|--|
| Segment | VA Route 704 (Harmony Church Road) north to VA Route 7/US Route 15 (Leesburg Bypass) |
| Policy Areas | Rural, Town of Leesburg |
| Existing Condition | |
| Functional Class | Minor Arterial/Virginia Byway |
| Lanes/Right of Way | 2/Varies |
| Description | R2/U2/U4M. Local access undivided and median divided rural and urban arterial; four-lane divided (U4M) section north of VA Route 621 (Evergreen Mills Road). Grade-separated interchange at VA Route 7/US Route 15 (Leesburg Bypass). Design speed varies. |
| Ultimate Condition | |
| Functional Class | Minor Arterial/Virginia Byway |

| | |
|-------------------------------|---|
| Lanes/Right of Way | 4/ROW subject to DTCI review – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities. ROW width within Town of Leesburg determined by Town. |
| Description | U4M. Controlled access median divided urban arterial. Grade-separated interchange at VA Route 7/US Route 15 (Leesburg Bypass). Left and right turn lanes required at all intersections. Design speed determined by VDOT, DTCI and Town of Leesburg. Improvements will be constructed in conformance with the Heritage Resource Policies of the CTP and the Scenic Areas and Corridor Policies of the Revised General Plan and the Heritage Preservation Plan. |
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements; bicycle and pedestrian facilities within the Town of Leesburg subject to Town review. |

17a. US Route 15 - James Monroe Highway

| | |
|---------|---|
| Segment | US Route 15 Business (North King Street) north to Montresor Road (VA Route 661) |
|---------|---|

| | |
|-------------|-------|
| Policy Area | Rural |
|-------------|-------|

Existing Condition

| | |
|--------------------|---|
| Functional Class | Principal Arterial/Virginia Byway |
| Lanes/Right of Way | 2/Varies |
| Description | R2. Local access undivided rural arterial. Design speed varies. |

Ultimate Condition

| | |
|-------------------------------|---|
| Functional Class | Principal Arterial/Virginia Byway |
| Lanes/Right of Way | 4/ROW subject to DTCI review – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities |
| Description | R4M. Controlled access median divided rural arterial. Grade-separated and/or roundabout options to be explored at US Route 15 Business (North King Street) by later study. Left and right turn lanes required at all intersections. Design speed determined by VDOT and DTCI. Improvements will be constructed in conformance with the Heritage Resource Policies of the CTP and the Scenic Areas and Corridor Policies of the Revised General Plan and the Heritage Preservation Plan. |
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. |

17b. US Route 15 - James Monroe Highway

| | |
|---------|--|
| Segment | Montresor Road (VA Route 661) north to the Maryland State Line |
|---------|--|

| | |
|-------------|-------|
| Policy Area | Rural |
|-------------|-------|

Existing Condition

| | |
|--------------------|---|
| Functional Class | Principal Arterial/Virginia Byway |
| Lanes/Right of Way | 2/Varies |
| Description | R2. Local access undivided rural arterial. Design speed varies. |

Ultimate Condition

| | |
|-------------------------------|--|
| Functional Class | Principal Arterial/Virginia Byway |
| Lanes/Right of Way | 2/ROW subject to DTCl review – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities |
| Description | R2. Local access undivided rural arterial. Left and right turn lanes provided where required for safety. Design speed determined by VDOT and DTCl. Improvements will be constructed in conformance with the Heritage Resource Policies of the CTP and the Scenic Areas and Corridor Policies of the Revised General Plan and the Heritage Preservation Plan. |
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. |

18. VA Route 28 - Sully Road (Darrell Green Boulevard)

| | |
|-------------|---|
| Segment | Fairfax County line north to VA Route 606 (Old Ox Road) |
| Policy Area | Suburban (Dulles, Sterling) |

Existing Condition

| | |
|--------------------|---|
| Functional Class | Principal Arterial |
| Lanes/Right of Way | 6/180 feet |
| Description | U6M. Limited access median divided urban arterial. Grade-separated interchanges at VA Route 267 (Dulles Toll/Access Road), VA Route 209 (Innovation Avenue), and VA Route 606 (Old Ox Road). Design speed varies. |

Ultimate Condition

| | |
|-------------------------------|---|
| Functional Class | Principal Arterial |
| Lanes/Right of Way | 10/200 feet – Additional ROW may be needed for interchange(s) |
| Description | U10M. Limited access median divided urban arterial. Grade-separated interchanges at VA Route 267 (Dulles Toll/Access Road) and VA Route 606 (Old Ox Road). Study of alternative uses (e.g., HOV, bus lanes) to be considered when facility is expanded to Ultimate Condition. Design speed determined by VDOT and DTCl. |
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. |

19. VA Route 28 - Sully Road (Darrell Green Boulevard)

Segment VA Route 606 (Old Ox Road) north to VA Route 7 (Harry Byrd Highway)

Policy Area Suburban (Sterling)

Existing/Interim Condition

Functional Class Principal Arterial

Lanes/Right of Way 6/180 feet

Description U6M. Limited access median divided urban arterial. Grade-separated interchanges at VA Route 606 (Old Ox Road), VA Route 846 (Sterling Boulevard), VA Route 625 (Waxpool Road/Church Road), VA Route 1793 (Nokes Boulevard) and VA Route 7 (Harry Byrd Highway). Partial northbound interchange to eastbound Warp Drive. Design speed varies.

Ultimate Condition

Functional Class Principal Arterial

Lanes/Right of Way 8/200 feet – Additional ROW may be needed for interchange(s)

Description U8M. Limited access median divided urban arterial. Grade-separated interchanges at VA Route 606 (Old Ox Road), VA Route 846 (Sterling Boulevard), VA Route 625 (Waxpool Road/Church Road), VA Route 1793 (Nokes Boulevard) and VA Route 7 (Harry Byrd Highway). Partial northbound interchange to eastbound Warp Drive. Study of alternative uses (e.g., HOV, bus lanes) to be considered when facility is expanded to Ultimate Condition. Design speed determined by VDOT and DTCL.

Bicycle/Pedestrian Facilities Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.

20. US Route 50 - John Mosby Highway

Segment Fairfax County Line west to VA Route 659 Relocated (Northstar Boulevard)

Policy Area Suburban (Dulles)

Existing Condition

Functional Class Minor Arterial

Lanes/Right of Way 4-6/Varies

Description R4M/R6M. Controlled access and local access median divided rural arterial. Currently six-lane (R6M) section between VA Route 742 (Poland Road) and VA Route 606 (Loudoun County Parkway). Individual site access occurs along entire segment. Median crossover spacing varies. Design speed varies.

Interim Condition

Functional Class Principal Arterial

Lanes/Right of Way 6/200 feet – Additional ROW may be needed for turn lanes

| | |
|-------------------------------|--|
| Description | U6M. Controlled access median divided urban arterial. Individual site access will be terminated. Left and right turn lanes required at all intersections. Design speed determined by VDOT and DTCI. |
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. |
| Ultimate Condition | |
| Functional Class | Principal Arterial |
| Lanes/Right of Way | 6/200 feet – Additional ROW may be needed for interchange(s) |
| Description | U6M. Limited access median divided urban arterial. Grade-separated interchanges at VA Route 2200 (Tall Cedars Parkway), VA Route 2201 (South Riding Boulevard), VA Route 606 (Loudoun County Parkway), VA Route 606 Extended (Arcola Boulevard/West Spine Road), and VA Route 659 Relocated (Northstar Boulevard). Grade-separated options to be explored at VA Route 609 (Pleasant Valley Road). All at-grade access is terminated. Functionality of planned interchanges within the segment of the planned limited access corridor between VA Route 606 (Loudoun County Parkway) and VA Route 659 Relocated (Northstar Boulevard) to be reviewed by a later study. Design speed determined by VDOT and DTCI. |
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. |

21. US Route 50 - John Mosby Highway

| | |
|---------------------------|---|
| Segment | VA Route 659 Relocated (Northstar Boulevard) west to Lenah Loop Road |
| Policy Area | Transition |
| Existing Condition | |
| Functional Class | Minor Arterial |
| Lanes/Right of Way | 2-4/Varies |
| Description | R2/R4M. Controlled access and local access median divided and undivided rural arterial. Individual site access occurs along two-lane (R2) section. Median crossover spacing varies on four-lane (R4M) section. Design speed varies. |
| Ultimate Condition | |
| Functional Class | Minor Arterial |
| Lanes/Right of Way | 4/ROW subject to DTCI review – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities |
| Description | R4M. Controlled access median divided rural arterial. Grade-separated interchange at VA Route 659 Relocated (Northstar Boulevard). Refer to VDOT Road Design Manual for median crossover spacing requirements. |

Left and right turn lanes required at all intersections. Design speed determined by VDOT and DTCI.

Bicycle/Pedestrian Facilities Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.

22. US Route 50 - John Mosby Highway

Segment Lenah Loop Road west to Village of Aldie

Policy Areas Transition, Rural

Existing Condition

Functional Class Minor Arterial

Lanes/Right of Way 2/Varies

Description R2. Local access undivided rural arterial. Roundabouts at VA Route 860 (Watson Road), the US Route 15/50 Connector (Howzers Branch Drive), and US Route 15 (James Monroe Highway). Design speed varies.

Ultimate Condition

Functional Class Minor Arterial/Proposed Virginia Byway

Lanes/Right of Way 2/ROW subject to DTCI review – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities

Description R2. Local access undivided rural arterial. Traffic calming measures implemented in accordance with the US Route 50 Traffic Calming Project. Roundabouts at VA Route 860 (Watson Road), the US Route 15/50 Connector (Howzers Branch Drive), and US Route 15 (James Monroe Highway). In Transition Policy Area, left and right turn lanes required at major intersections. In Rural Policy Area, left and right turn lanes provided where required for safety. Design speed determined by VDOT and DTCI. Improvements will be constructed in conformance with the Heritage Resource Policies of the CTP and the Scenic Areas and Corridor Policies of the Revised General Plan and the Heritage Preservation Plan.

Bicycle/Pedestrian Facilities Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.

23. US Route 50 - John Mosby Highway

Segment Village of Aldie west to Middleburg Town Limits

Policy Area Rural

Existing Condition

Functional Class Minor Arterial/Proposed Virginia Byway

Lanes/Right of Way 2/Varies

| | |
|-------------------------------|---|
| Description | R2. Local access undivided rural arterial. Design speed varies. |
| Ultimate Condition | |
| Functional Class | Minor Arterial/Proposed Virginia Byway |
| Lanes/Right of Way | 2/Varies – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities |
| Description | R2. Local access undivided rural arterial. Traffic calming measures implemented in accordance with the US Route 50 Traffic Calming Project. Left and right turn lanes provided where required for safety. Design speed determined by VDOT and DTCL. Improvements will be constructed in conformance with the Heritage Resource Policies of the CTP and the Scenic Areas and Corridor Policies of the Revised General Plan and the Heritage Preservation Plan. |
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. |

24. US Route 50 – Washington Street (Middleburg)

| | |
|------------------------------------|--|
| Segment | Existing alignment in Town of Middleburg |
| Policy Area | Town of Middleburg |
| Existing/Ultimate Condition | |
| Functional Class | Minor Arterial/Proposed Virginia Byway |
| Lanes/Right of Way | 2/Varies – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities. Ultimate ROW width determined by Town of Middleburg. |
| Description | R2. Local access undivided rural arterial. Traffic calming measures implemented in accordance with the US Route 50 Traffic Calming Project. Left and right turn lanes recommended at major intersections. Design speed varies. Any improvements will be constructed in conformance with the Heritage Resource Policies of the CTP and the Scenic Areas and Corridor Policies of the Revised General Plan and the Heritage Preservation Plan. |
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements; bicycle and pedestrian facilities subject to Town of Middleburg review. |

25. VA Route 209 - Innovation Avenue

| | |
|---------------------------|--|
| Segment | VA Route 28 (Sully Road) east to Fairfax County line |
| Policy Area | Suburban (Sterling) |
| Existing Condition | |
| Functional Class | Major Collector |
| Lanes/Right of Way | 4/Varies |

| | |
|-------------------------------|--|
| Description | U4M. Controlled access median divided urban collector through Dulles World Center site. Grade separated interchange at VA Route 28 (Sully Road). 40 mph design speed. |
| Ultimate Condition | |
| Functional Class | Major Collector |
| Lanes/Right of Way | 6/120 feet – Additional ROW may be needed for interchange(s), turn lanes and bicycle/pedestrian facilities |
| Description | U6M. Controlled access median divided urban collector. Road to be realigned along northern boundary of Dulles World Center site Connection to VA Route 605 (Rock Hill Road) in Fairfax County. Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 40 mph design speed. Refer to Note G on the CTP Map for additional information regarding this roadway. |
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. |

26. VA Route 267 - Dulles Greenway

| | |
|--------------|--|
| Segment | VA Route 267 (Dulles Airport Access/Toll Road) northwest to VA Route 7/US Route 15 (Leesburg Bypass) |
| Policy Areas | Suburban (Sterling, Dulles, Ashburn), Transition, Rural, Leesburg JLMA, Town of Leesburg |

Existing Condition

| | |
|-------------------------------|---|
| Functional Class | Principal Arterial |
| Lanes/Right of Way | 6/250 feet |
| Description | R6M. Limited access median divided rural arterial. Toll road. Grade-separated interchanges at VA Route 28 (Sully Road), VA Route 606 (Old Ox Road), VA Route 1950 (Loudoun County Parkway), VA Route 772 (Ashburn Village Boulevard/Mooreview Parkway), VA Route 901 (Claiborne Parkway), VA Route 659 (Belmont Ridge Road), VA Route 653 (Shreve Mill Road/Crosstrail Boulevard), Battlefield Parkway, and VA Route 7/US Route 15 (Leesburg Bypass). 60 mph or greater design speed. |
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. |

Ultimate Condition

| | |
|--------------------|--|
| Functional Class | Principal Arterial |
| Lanes/Right of Way | 8/250 feet – Additional ROW may be needed for interchange(s) |
| Description | R8M. Limited access median divided rural arterial. Toll road. Additional grade-separated interchange beyond Existing Condition at westernmost VA Route 625 (Sycolin Road) crossing and partial |

westbound interchange between Crosstrail Boulevard and Battlefield Parkway. 60 mph or greater design speed.

Bicycle/Pedestrian Facilities Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.

27. VA Route 267 - Dulles Airport Access Road

Segment Fairfax County line west to Washington Dulles International Airport

Policy Area Suburban (Dulles)

Existing/Ultimate Condition

Functional Class Principal Arterial

Lanes/Right of Way 6/Varies

Description R6M. Limited access median divided rural arterial. Grade-separated interchange at VA Route 28 (Sully Road). 60 mph or greater design speed.

Bicycle/Pedestrian Facilities Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.

28. VA Route 287 - Berlin Turnpike

Segment VA Route 7 Business (East Main Street) (opposite Purcellville South Collector Road) north to Purcellville VA Route 7 North Collector Road

Policy Areas Town of Purcellville, Purcellville JLMA

Existing Condition

Functional Class Major Collector

Lanes/Right of Way 2/Varies

Description R2. Local access undivided rural collector. Grade-separated interchange at VA Route 7 Bypass. Roundabout at VA Route 7 Business/Purcellville South Collector Road. Design speed varies.

Ultimate Condition

Functional Class Major Collector

Lanes/Right of Way 4/ROW subject to DTCI review – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities. ROW width within Town of Purcellville determined by Town.

Description U4M. Controlled access median divided urban collector. Grade-separated interchange at VA Route 7 Bypass. Roundabout at VA Route 7 Business/Purcellville South Collector Road. Left and right turn lanes required at all intersections. Design speed determined by VDOT, Town of Purcellville and DTCI.

Bicycle/Pedestrian Facilities Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements; bicycle and

pedestrian facilities within the Town of Purcellville subject to Town review.

29. VA Route 287 - Berlin Turnpike

Segment Purcellville VA Route 7 North Collector Road north to Lovettsville Town Limits

Policy Areas Purcellville JLMA, Rural

Existing Condition

Functional Class Major Collector

Lanes/Right of Way 2/Varies

Description R2. Local access undivided rural collector. Design speed varies.

Ultimate Condition

Functional Class Major Collector

Lanes/Right of Way 2/ROW subject to DTCI review – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities

Description R2. Local access undivided rural collector. In JLMA, left and right turn lanes required at major intersections. In Rural Policy Area, left and right turn lanes provided where required for safety. Design speed determined by VDOT and DTCI.

Bicycle/Pedestrian Facilities Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.

30. VA Route 287 - Berlin Pike (Lovettsville)

Segment Existing alignment in Town of Lovettsville

Policy Area Town of Lovettsville

Existing Condition

Functional Class Major Collector

Lanes/Right of Way 2/Varies

Description R2. Local access undivided rural collector. Design speed varies.

Ultimate Condition

Functional Class Major Collector

Lanes/Right of Way 2/ROW determined by Town of Lovettsville – Additional ROW may be needed for turn lanes

Description R2. Local access undivided rural collector. Left and right turn lanes recommended at major intersections. Design speed determined by VDOT and Town of Lovettsville.

| | |
|-------------------------------|---|
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements; bicycle and pedestrian facilities subject to Town of Lovettsville review. |
|-------------------------------|---|

31. VA Route 287 - Berlin Turnpike

| | |
|---------|--|
| Segment | Lovettsville Town Limits north to MD Route 17 at Maryland State Line |
|---------|--|

| | |
|-------------|-------|
| Policy Area | Rural |
|-------------|-------|

Existing Condition

| | |
|------------------|-----------------|
| Functional Class | Major Collector |
|------------------|-----------------|

| | |
|--------------------|----------|
| Lanes/Right of Way | 2/Varies |
|--------------------|----------|

| | |
|-------------|--|
| Description | R2. Local access undivided rural collector. Design speed varies. |
|-------------|--|

Ultimate Condition

| | |
|------------------|-----------------|
| Functional Class | Major Collector |
|------------------|-----------------|

| | |
|--------------------|--|
| Lanes/Right of Way | 2/ROW subject to DTCI review – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities |
|--------------------|--|

| | |
|-------------|---|
| Description | R2. Local access undivided rural collector. Left and right turn lanes provided where required for safety. Design speed determined by VDOT and DTCI. |
|-------------|---|

| | |
|-------------------------------|---|
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. |
|-------------------------------|---|

32. US Route 340 - Jefferson Pike

| | |
|---------|--|
| Segment | Maryland State Line west to West Virginia State Line |
|---------|--|

| | |
|-------------|-------|
| Policy Area | Rural |
|-------------|-------|

Existing/Ultimate Condition

| | |
|------------------|----------------|
| Functional Class | Minor Arterial |
|------------------|----------------|

| | |
|--------------------|--|
| Lanes/Right of Way | 2/Varies – Additional ROW may be needed for turn lanes |
|--------------------|--|

| | |
|-------------|---|
| Description | R2. Local access undivided rural arterial. Left and right turn lanes provided where required for safety. Design speed varies. |
|-------------|---|

| | |
|-------------------------------|---|
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. |
|-------------------------------|---|

Secondary Roads

33. US Route 15 / 50 Connector - Howsers Branch Drive

| | |
|---------|---|
| Segment | US Route 15 (James Monroe Highway) north and east to US Route 50 (John Mosby Highway) |
|---------|---|

| | |
|-------------|-------|
| Policy Area | Rural |
|-------------|-------|

Existing/Ultimate Condition

| | |
|------------------|----------------|
| Functional Class | Minor Arterial |
|------------------|----------------|

| | |
|--------------------|-----------|
| Lanes/Right of Way | 2/50 feet |
|--------------------|-----------|

| | |
|-------------|--|
| Description | R2. Connection between US Route 15 south of Gilberts Corner and US Route 50 east of Gilberts Corner as part of the US Route 50 Traffic Calming Project. Roundabouts at US Route 15 (James Monroe Highway) and US Route 50 (John Mosby Highway). 30 mph design speed. |
|-------------|--|

| | |
|-------------------------------|---|
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. |
|-------------------------------|---|

34. VA Route 604 - Sugarland Road

| | |
|---------|--|
| Segment | Fairfax County Line west to VA Route 625 (Church Road) |
|---------|--|

| | |
|-------------|---------------------|
| Policy Area | Suburban (Sterling) |
|-------------|---------------------|

Existing/Ultimate Condition

| | |
|------------------|-----------------|
| Functional Class | Minor Collector |
|------------------|-----------------|

| | |
|--------------------|---|
| Lanes/Right of Way | 4/70 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities |
|--------------------|---|

| | |
|-------------|---|
| Description | U4. Local access undivided urban collector. Left and right turn lanes required at major intersections. 40 mph design speed. |
|-------------|---|

| | |
|-------------------------------|---|
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. |
|-------------------------------|---|

35. VA Route 605 - Rock Hill Road

| | |
|---------|--|
| Segment | VA Route 606 (Old Ox Road) south west to future VA Route 868 (Davis Drive) |
|---------|--|

| | |
|-------------|---------------------|
| Policy Area | Suburban (Sterling) |
|-------------|---------------------|

Existing Condition

| | |
|---------|---|
| Segment | VA Route 606 (Old Ox Road) south to Fairfax County Line |
|---------|---|

| | |
|------------------|-----------------|
| Functional Class | Minor Collector |
|------------------|-----------------|

| | |
|--------------------|----------|
| Lanes/Right of Way | 2/Varies |
|--------------------|----------|

| | |
|-------------------------------|--|
| Description | R2. Local access undivided rural collector. Design speed varies. |
| Ultimate Condition | |
| Functional Class | Minor Collector |
| Lanes/Right of Way | 2/50 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities |
| Description | U2. Local access undivided urban collector. Road to be realigned to connect with future VA Route 868 (Davis Drive). Left and right turn lanes required at major intersections. Design speed determined by VDOT and DTCL. Refer to Note G on the CTP Map for additional information regarding this roadway. |
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. |

36. VA Route 606 - Loudoun County Parkway

| | |
|-------------|--|
| Segment | VA Route 606 (Old Ox Road) at VA Route 842 (Arcola Road/future Arcola Boulevard) intersection south to US Route 50 (John Mosby Highway), following existing VA Route 606 alignment |
| Policy Area | Suburban (Dulles) |

Existing Condition

| | |
|--------------------|---|
| Functional Class | Major Collector |
| Lanes/Right of Way | 2-4/varies |
| Description | R2/U4M. Local access undivided and median divided urban collector road; two-lane (R2) section north of VA Route 621 (Evergreen Mills Road); four-lane divided (U4M) section elsewhere. Design speed varies. |

Interim Condition

| | |
|-------------------------------|---|
| Functional Class | Minor Arterial |
| Lanes/Right of Way | 4/120 feet – Additional ROW may be needed for turn lanes |
| Description | U4M. Controlled access median divided urban arterial. Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 50 mph design speed. |
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. |

Ultimate Condition

| | |
|--------------------|---|
| Functional Class | Principal Arterial |
| Lanes/Right of Way | 8/200 feet – Additional ROW may be needed for turn lanes and interchange(s) |
| Description | U8M. Limited access median divided urban arterial. Grade-separated interchanges at VA Route 606 (Old Ox Road) and US Route 50 (John |

Mosby Highway). Additional grade-separated options to be explored at other existing intersections along segment. Study of alternative uses (e.g., HOV, bus lanes) to be considered when facility is expanded to Ultimate Condition. Design speed determined by VDOT and DTCI.

Bicycle/Pedestrian Facilities Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.

37. VA Route 606 - Loudoun County Parkway

Segment US Route 50 (John Mosby Highway) south to VA Route 620 (Braddock Road)

Policy Area Suburban (Dulles)

Existing/Interim Condition

Functional Class Minor Arterial

Lanes/Right of Way 4/120 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities

Description U4M. Controlled access median divided urban arterial. Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 50 mph design speed.

Bicycle/Pedestrian Facilities Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.

Ultimate Condition

Functional Class Principal Arterial

Lanes/Right of Way 6/120 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities

Description U6M. Controlled access median divided urban arterial. Grade-separated interchange at US Route 50 (John Mosby Highway). Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 50 mph design speed.

Bicycle/Pedestrian Facilities Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.

38. VA Route 606 - Loudoun County Parkway (formerly Tri-County Parkway)

Segment VA Route 620 (Braddock Road) south to Fairfax County Line

Policy Area Transition

Interim Condition

Functional Class Major Collector

Lanes/Right of Way 4/120 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities

| | |
|-------------------------------|---|
| Description | R4M. Controlled access median divided urban collector. Will follow portions of VA Route 613 (Ticonderoga Road) and VA Route 621 (Bull Run Post Office Road) alignments. Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 45 mph design speed. |
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. |
| Ultimate Condition | |
| Functional Class | Major Collector |
| Lanes/Right of Way | 6/120 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities |
| Description | R6M. Controlled access median divided urban collector. Will follow portions of VA Route 613 (Ticonderoga Road) and VA Route 621 (Bull Run Post Office Road) alignments. Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 45 mph design speed. |
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. |

39. VA Route 606 - Old Ox Road

| | |
|-------------------------------|---|
| Segment | Fairfax County Line/Herndon Town Limits west to VA Route 28 (Sully Road) interchange |
| Policy Area | Suburban (Sterling) |
| Existing Condition | |
| Functional Class | Major Collector |
| Lanes/Right of Way | 4/120 feet |
| Description | U4M. Controlled access median divided urban collector. Grade-separated interchange at VA Route 28 (Sully Road). 45 mph design speed. |
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. |
| Ultimate Condition | |
| Functional Class | Major Collector |
| Lanes/Right of Way | 6/120 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities |
| Description | U6M. Controlled access median divided urban collector. Grade-separated interchange at VA Route 28 (Sully Road). Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 45 mph design speed. Refer to Note G on the CTP Map for additional information regarding this roadway. |

| | |
|-------------------------------|---|
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. |
|-------------------------------|---|

40. VA Route 606 - Old Ox Road

| | |
|---------|---|
| Segment | VA Route 28 (Sully Road) interchange west to VA Route 267 (Dulles Greenway) interchange |
|---------|---|

| | |
|-------------|---------------------|
| Policy Area | Suburban (Sterling) |
|-------------|---------------------|

Existing Condition

| | |
|------------------|-----------------|
| Functional Class | Major Collector |
|------------------|-----------------|

| | |
|--------------------|--------------|
| Lanes/Right of Way | 4-6/120 feet |
|--------------------|--------------|

| | |
|-------------|--|
| Description | U4M/U6M. Controlled access median divided urban collector. Grade-separated interchanges at VA Route 28 (Sully Road) and VA Route 267 (Dulles Greenway). 45 mph design speed. |
|-------------|--|

Interim Condition

| | |
|------------------|-----------------|
| Functional Class | Major Collector |
|------------------|-----------------|

| | |
|--------------------|--|
| Lanes/Right of Way | 6/120 feet – Additional ROW may be needed for turn lanes |
|--------------------|--|

| | |
|-------------|---|
| Description | U6M. Controlled access median divided urban collector. Grade-separated interchanges at VA Route 28 (Sully Road) and VA Route 267 (Dulles Greenway). Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 50 mph design speed. |
|-------------|---|

| | |
|-------------------------------|---|
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. |
|-------------------------------|---|

Ultimate Condition

| | |
|------------------|--------------------|
| Functional Class | Principal Arterial |
|------------------|--------------------|

| | |
|--------------------|--|
| Lanes/Right of Way | 6/200 feet – Additional ROW may be needed for interchange(s) |
|--------------------|--|

| | |
|-------------|--|
| Description | U6M. Limited access median divided urban arterial. Grade-separated interchanges at VA Route 28 (Sully Road) and VA Route 267 (Dulles Greenway). Local access, additional interchange locations, and ultimate alignment to be determined by a later study with consideration of adjacent development/stakeholders. Study of alternative uses (e.g., HOV, bus lanes) to be considered when facility is expanded to Ultimate Condition. Design speed determined by VDOT and DTCL. |
|-------------|--|

| | |
|-------------------------------|---|
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. |
|-------------------------------|---|

41. VA Route 606 - Old Ox Road

| | |
|---------|---|
| Segment | VA Route 267 (Dulles Greenway) interchange south to VA Route 607 (Loudoun County Parkway) |
|---------|---|

| | |
|-------------------------------|--|
| Policy Area | Suburban (Dulles) |
| Existing Condition | |
| Functional Class | Major Collector |
| Lanes/Right of Way | 2/Varies |
| Description | R2. Local access undivided rural collector. Grade-separated interchange at VA Route 267 (Dulles Greenway). Design speed varies. |
| Interim Condition | |
| Functional Class | Major Collector |
| Lanes/Right of Way | 4/120 feet – Additional ROW may be needed for turn lanes |
| Description | U4M. Controlled access median divided urban collector. Grade-separated interchange at VA Route 267 (Dulles Greenway). Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 50 mph design speed. |
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. |
| Ultimate Condition | |
| Functional Class | Principal Arterial |
| Lanes/Right of Way | 6/200 feet – Additional ROW may be needed for interchange(s) |
| Description | U6M. Limited access median divided urban arterial. Additional grade-separated interchanges beyond Existing and Interim Conditions at VA Route 645 Extended (Westwind Drive) and at VA Route 607 (Loudoun County Parkway). Local access, interchange locations and ultimate alignment to be determined by a later study with consideration of adjacent development/stakeholders. Study of alternative uses (e.g., HOV, bus lanes) to be considered when facility is expanded to Ultimate Condition. Design speed determined by VDOT and DTCI. |
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. |

42. VA Route 607 - Loudoun County Parkway

| | |
|---------------------------|--|
| Segment | VA Route 1050 (George Washington Boulevard) south to VA Route 625 (Waxpool Road) |
| Policy Area | Suburban (Ashburn) |
| Existing Condition | |
| Functional Class | Minor Arterial |
| Lanes/Right of Way | 2-4/120 feet |

| | |
|-------------------------------|---|
| Description | U2/U4M. Controlled access undivided and median divided urban arterial. Grade-separated interchange at VA Route 7 (Harry Byrd Highway). Two-lane (U2) section from VA Route 2150 (Gloucester Parkway) south to just north of the W & OD Trail. Design speed varies. |
| Interim Condition | |
| Functional Class | Minor Arterial |
| Lanes/Right of Way | 4/120 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities |
| Description | U4M. Controlled access median divided urban arterial. Grade-separated interchange at VA Route 7 (Harry Byrd Highway). Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 50 mph design speed. |
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. |
| Ultimate Condition | |
| Functional Class | Minor Arterial |
| Lanes/Right of Way | 6/120 feet – Additional ROW may be needed for interchange(s), turn lanes and bicycle/pedestrian facilities |
| Description | U6M. Controlled access median divided urban arterial. Grade-separated interchange at VA Route 7 (Harry Byrd Highway). Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 50 mph design speed. |
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. |

43. VA Route 607 - Loudoun County Parkway

| | |
|-----------------------------------|---|
| Segment | VA Route 625 (Waxpool Road) south to VA Route 267 (Dulles Greenway) interchange |
| Policy Area | Suburban (Ashburn) |
| Existing/Interim Condition | |
| Functional Class | Minor Arterial |
| Lanes/Right of Way | 4-6/120 feet |
| Description | U4M/U6M. Controlled access median divided urban arterial. Grade-separated interchange at VA Route 267 (Dulles Greenway). Four-lane divided (U4M) section between VA Route 643 (Shellhorn Road) and VA Route 267 (Dulles Greenway). Design Speed Varies. |
| Ultimate Condition | |
| Functional Class | Minor Arterial |

| | |
|-------------------------------|--|
| Lanes/Right of Way | 6/120 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities |
| Description | U6M. Controlled access median divided urban arterial. Grade-separated interchange at VA Route 267 (Dulles Greenway). Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 50 mph design speed. |
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. |

44. VA Route 607 - Loudoun County Parkway

| | |
|-------------|--|
| Segment | VA Route 267 (Dulles Greenway) interchange west and south to VA Route 606 (Old Ox Road) (near existing VA Route 842 (Arcola Road/future Arcola Boulevard)/VA Route 606 (Old Ox Road) intersection) |
| Policy Area | Suburban (Ashburn, Dulles) |

Existing/Interim Condition

| | |
|-------------------------------|--|
| Existing Segment | VA Route 267 (Dulles Greenway) interchange south to approximately 2,800 feet south of VA Route 901 (Claiborne Parkway) |
| Functional Class | Minor Arterial |
| Lanes/Right of Way | 4/120 feet – Additional ROW may be needed for turn lanes |
| Description | U4M. Controlled access median divided urban arterial. Grade-separated interchange at VA Route 267 (Dulles Greenway). Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 50 mph design speed. |
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. |

Ultimate Condition

| | |
|-------------------------------|---|
| Functional Class | Principal Arterial |
| Lanes/Right of Way | 6/200 feet – Additional ROW may be needed for interchange(s), turn lanes, and bicycle/pedestrian facilities |
| Description | U6M. Controlled access median divided urban arterial. Grade-separated interchanges at VA Route 267 (Dulles Greenway) and at VA Route 606 (Old Ox Road). Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 50 mph design speed. |
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. |

45. VA Route 609 - Pleasant Valley Road

| | |
|---------|---|
| Segment | Quarry Road (US Route 50 North Collector Road) south to Fairfax County Line |
|---------|---|

| | |
|-------------------------------|---|
| Policy Area | Suburban (Dulles) |
| Existing Condition | |
| Functional Class | Local/Secondary Road |
| Lanes/Right of Way | 2/Varies |
| Description | R2. Local access undivided rural secondary road. Design speed varies. |
| Ultimate Condition | |
| Functional Class | Minor Collector |
| Lanes/Right of Way | 4/70 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities |
| Description | U4. Local access undivided urban collector. Grade-separated options to be explored at US Route 50 (John Mosby Highway). Left and right turn lanes required at major intersections. 40 mph design speed. |
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. |

46. VA Route 611 - St. Louis Road

| | |
|-------------------------------|--|
| Segment | US Route 50 (John Mosby Highway) at Fauquier County Line north to VA Route 734 (Snickersville Turnpike) |
| Policy Area | Rural |
| Existing Condition | |
| Functional Class | Major Collector |
| Lanes/Right of Way | 2/Varies |
| Description | R2. Local access undivided rural collector. Design speed varies. Segments of roadway located within/adjacent to Beaverdam Creek Historic Roadways District. |
| Ultimate Condition | |
| Functional Class | Major Collector |
| Lanes/Right of Way | 2/ROW subject to DTCI review – Additional ROW may be needed for turn lanes |
| Description | R2. Local access undivided rural collector. Left and right turn lanes provided where required for safety. Design speed determined by VDOT and DTCI. Segments of roadway located within/adjacent to Beaverdam Creek Historic Roadways District. Improvements will be constructed in conformance with the Heritage Resource Policies of the CTP and the Scenic Areas and Corridor Policies of the Revised General Plan and the Heritage Preservation Plan. |
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. |

47. VA Route 620 - Braddock Road

| | |
|---------|--|
| Segment | Fairfax County Line west to VA Route 659 Relocated (Northstar Boulevard) |
|---------|--|

| | |
|--------------|-------------------------------|
| Policy Areas | Suburban (Dulles), Transition |
|--------------|-------------------------------|

Existing Condition

| | |
|------------------|-----------------|
| Functional Class | Minor Collector |
|------------------|-----------------|

| | |
|--------------------|----------|
| Lanes/Right of Way | 2/Varies |
|--------------------|----------|

| | |
|-------------|--|
| Description | R2/U2. Local access undivided rural and urban collector road. Design speed varies. |
|-------------|--|

Ultimate Condition

| | |
|------------------|-----------------|
| Functional Class | Major Collector |
|------------------|-----------------|

| | |
|--------------------|---|
| Lanes/Right of Way | 4/90 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities |
|--------------------|---|

| | |
|-------------|--|
| Description | U4M. Controlled access median divided urban collector. Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 45 mph design speed. |
|-------------|--|

| | |
|-------------------------------|---|
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. |
|-------------------------------|---|

48. VA Route 620 / VA Route 705 - Braddock Road

| | |
|---------|---|
| Segment | VA Route 659 Relocated (Northstar Boulevard) west to US Route 15 (James Monroe Highway) |
|---------|---|

| | |
|-------------|-------------------|
| Policy Area | Transition, Rural |
|-------------|-------------------|

Existing Condition

| | |
|------------------|-----------------|
| Functional Class | Minor Collector |
|------------------|-----------------|

| | |
|--------------------|----------|
| Lanes/Right of Way | 2/Varies |
|--------------------|----------|

| | |
|-------------|--|
| Description | R2. Local access undivided rural collector. Design speed varies. |
|-------------|--|

Ultimate Condition

| | |
|------------------|-----------------|
| Functional Class | Minor Collector |
|------------------|-----------------|

| | |
|--------------------|---|
| Lanes/Right of Way | 2/70 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities |
|--------------------|---|

| | |
|-------------|--|
| Description | R2. Local access undivided rural collector. In Transition Policy Area, left and right turn lanes required at major intersections. In Rural Policy Area, left and right turn lanes provided where required for safety. 40 mph design speed. |
|-------------|--|

| | |
|-------------------------------|---|
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. |
|-------------------------------|---|

49. VA Route 621 - Evergreen Mills Road

| | |
|---------|---|
| Segment | VA Route 606 (Loudoun County Parkway) northwest to VA Route 659 Relocated (Northstar Boulevard) |
|---------|---|

| | |
|-------------|-------------------|
| Policy Area | Suburban (Dulles) |
|-------------|-------------------|

Existing Condition

| | |
|------------------|--|
| Existing Segment | VA Route 606 (Loudoun County Parkway) northwest to future VA Route 659 Relocated (Northstar Boulevard) |
|------------------|--|

| | |
|------------------|-----------------|
| Functional Class | Major Collector |
|------------------|-----------------|

| | |
|--------------------|----------|
| Lanes/Right of Way | 2/Varies |
|--------------------|----------|

| | |
|-------------|--|
| Description | R2. Local access undivided rural collector. Design speed varies. |
|-------------|--|

Ultimate Condition

| | |
|------------------|-----------------|
| Functional Class | Major Collector |
|------------------|-----------------|

| | |
|--------------------|---|
| Lanes/Right of Way | 4/90 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities |
|--------------------|---|

| | |
|-------------|--|
| Description | U4M. Local access median divided urban collector. Left and right turn lanes required at all intersections. Design speed determined by VDOT and DTCL. |
|-------------|--|

| | |
|-------------------------------|---|
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. |
|-------------------------------|---|

50. VA Route 621 - Evergreen Mills Road

| | |
|---------|--|
| Segment | VA Route 621 Relocated (Shreveport Drive) northwest to Battlefield Parkway |
|---------|--|

| | |
|--------------|--|
| Policy Areas | Suburban (Dulles), Transition, Rural, Town of Leesburg |
|--------------|--|

Existing Condition

| | |
|------------------|-----------------|
| Functional Class | Major Collector |
|------------------|-----------------|

| | |
|--------------------|----------|
| Lanes/Right of Way | 2/Varies |
|--------------------|----------|

| | |
|-------------|--|
| Description | R2. Local access undivided rural collector. Design speed varies. |
|-------------|--|

Ultimate Condition

| | |
|------------------|-----------------|
| Functional Class | Major Collector |
|------------------|-----------------|

| | |
|--------------------|--|
| Lanes/Right of Way | 4/120 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities |
|--------------------|--|

| | |
|-------------|---|
| Description | R4M. Controlled access median divided rural collector. Refer to VDOT Road Design Manual for median crossover spacing requirements. Left |
|-------------|---|

and right turn lanes required at all intersections. Design speed determined by VDOT and DTCI.

Bicycle/Pedestrian Facilities Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.

51. VA Route 621 - Evergreen Mills Road

Segment Battlefield Parkway north and west to US Route 15 (South King Street)

Policy Area Town of Leesburg

Existing Condition

Functional Class Major Collector

Lanes/Right of Way 2/Varies

Description R2. Local access undivided rural collector. Design speed varies.

Ultimate Condition

Functional Class Major Collector

Lanes/Right of Way 4/ROW determined by Town of Leesburg – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities

Description U4. Local access undivided urban collector. Left and right turn lanes required at major intersections. 40 mph design speed.

Bicycle/Pedestrian Facilities Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements; bicycle and pedestrian facilities subject to Town of Leesburg review.

52. VA Route 621 Relocated - Shreveport Drive

Segment VA Route 621 (Evergreen Mills Road) (just west of VA Route 659 Relocated (Northstar Boulevard)) east to VA Route 607 (Loudoun County Parkway)

Policy Area Suburban (Dulles)

Ultimate Condition

Functional Class Major Collector

Lanes/Right of Way 4/120 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities

Description U4M. Controlled access median divided urban collector. Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 40 mph design speed.

Bicycle/Pedestrian Facilities Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.

53. VA Route 623 - Willisville Road

| | |
|---------|---|
| Segment | US Route 50 (John Mosby Highway) at Fauquier County Line north to VA Route 743 (Millville Road) |
|---------|---|

| | |
|-------------|-------|
| Policy Area | Rural |
|-------------|-------|

Existing Condition

| | |
|------------------|-----------------|
| Functional Class | Minor Collector |
|------------------|-----------------|

| | |
|--------------------|----------|
| Lanes/Right of Way | 2/Varies |
|--------------------|----------|

| | |
|-------------|---|
| Description | R2. Local access undivided rural collector. Design speed varies. Segments of roadway located within/adjacent to Beaverdam Creek Historic Roadways District. |
|-------------|---|

Ultimate Condition

| | |
|------------------|-----------------|
| Functional Class | Minor Collector |
|------------------|-----------------|

| | |
|--------------------|--|
| Lanes/Right of Way | 2/ROW subject to DTCI review – Additional ROW may be needed for turn lanes |
|--------------------|--|

| | |
|-------------|--|
| Description | R2. Local access undivided rural collector. Left and right turn lanes provided where required for safety. Design speed determined by VDOT and DTCI. Segments of roadway located within/adjacent to Beaverdam Creek Historic Roadways District. Improvements will be constructed in conformance with the Heritage Resource Policies of the CTP and the Scenic Areas and Corridor Policies of the Revised General Plan and the Heritage Preservation Plan. |
|-------------|--|

| | |
|-------------------------------|---|
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. |
|-------------------------------|---|

54. VA Route 625 / VA Route 1516 - Church Road / Oak Tree Lane

| | |
|---------|---|
| Segment | VA Route 604 (Sugarland Road) west to VA Route 846 (Sterling Boulevard) |
|---------|---|

| | |
|-------------|---------------------|
| Policy Area | Suburban (Sterling) |
|-------------|---------------------|

Existing/Ultimate Condition

| | |
|------------------|-----------------|
| Functional Class | Minor Collector |
|------------------|-----------------|

| | |
|--------------------|--|
| Lanes/Right of Way | 2/Varies – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities |
|--------------------|--|

| | |
|-------------|--|
| Description | U2. Local access undivided urban collector. Left and right turn lanes recommended at major intersections. Design speed varies. |
|-------------|--|

| | |
|-------------------------------|---|
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. |
|-------------------------------|---|

55. VA Route 625 - Church Road

| | |
|---------|---|
| Segment | VA Route 846 (Sterling Boulevard) west to VA Route 637 (Cascades Parkway) |
|---------|---|

| | |
|------------------------------------|--|
| Policy Area | Suburban (Sterling) |
| Existing/Ultimate Condition | |
| Functional Class | Minor Collector |
| Lanes/Right of Way | 2/Varies – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities |
| Description | U2. Local access undivided urban collector. Left and right turn lanes recommended at major intersections. 40 mph design speed. |
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. |

56. VA Route 625 - Church Road

| | |
|------------------------------------|--|
| Segment | VA Route 637 (Cascades Parkway) west to VA Route 1902 (Atlantic Boulevard)/VA Route 868 (Davis Drive) |
| Policy Area | Suburban (Sterling) |
| Existing/Ultimate Condition | |
| Functional Class | Major Collector |
| Lanes/Right of Way | 4/90 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities |
| Description | U4M. Controlled access median divided urban collector. Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 40 mph design speed. |
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. |

57. VA Route 625 - Church Road

| | |
|---------------------------|--|
| Segment | VA Route 1902 (Atlantic Boulevard)/VA Route 868 (Davis Drive) west to VA Route 28 (Sully Road) interchange |
| Policy Area | Suburban (Sterling) |
| Existing Condition | |
| Functional Class | Major Collector |
| Lanes/Right of Way | 4/Varies |
| Description | U4M. Controlled access median divided urban collector. Grade-separated interchange at VA Route 28 (Sully Road). Design speed varies. |
| Ultimate Condition | |
| Functional Class | Major Collector |

| | |
|-------------------------------|---|
| Lanes/Right of Way | 6/120 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities |
| Description | U6M. Controlled access median divided urban collector. Grade-separated interchange at VA Route 28 (Sully Road). Left and right turn lanes required at all intersections. 50 mph design speed. |
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. |

58. VA Route 625 - Waxpool Road

| | |
|-------------|--|
| Segment | VA Route 28 (Sully Road) interchange west to VA Route 1036 (Pacific Boulevard) |
| Policy Area | Suburban (Sterling) |

Existing/Ultimate Condition

| | |
|-------------------------------|---|
| Functional Class | Major Collector |
| Lanes/Right of Way | 6/120 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities |
| Description | U6M. Controlled access median divided urban collector. Grade-separated interchange at VA Route 28 (Sully Road). Left and right turn lanes required at all intersections. 50 mph design speed. |
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. |

59. VA Route 625 - Waxpool Road / Farmwell Road

| | |
|-------------|---|
| Segment | VA Route 1036 (Pacific Boulevard) west to VA Route 641 (Ashburn Road) |
| Policy Area | Suburban (Sterling, Ashburn) |

Existing Condition

| | |
|--------------------|---|
| Functional Class | Major Collector |
| Lanes/Right of Way | 4-6/Varies |
| Description | U4M/U6M. Controlled access median divided urban collector. Six-lane divided (U6M) section between VA Route 1036 (Pacific Boulevard) and VA Route 607 (Loudoun County Parkway); third westbound through lane continues west to VA Route 1950 (Smith Switch Road). 50 mph design speed. |

Ultimate Condition

| | |
|--------------------|--|
| Functional Class | Major Collector |
| Lanes/Right of Way | 6/120 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities |

| | |
|-------------------------------|--|
| Description | U6M. Controlled access median divided urban collector. Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 50 mph design speed. |
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. |

60. VA Route 625 - Ashburn Farm Parkway

| | |
|-------------|--|
| Segment | VA Route 641 (Ashburn Road) at VA Route 625 (Farmwell Road) west to VA Route 659 (Belmont Ridge Road) (opposite VA Route 625 (Sycolin Road)) |
| Policy Area | Suburban (Ashburn) |

Existing/Ultimate Condition

| | |
|-------------------------------|--|
| Functional Class | Major Collector |
| Lanes/Right of Way | 4/120 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities |
| Description | U4M. Controlled access median divided urban collector. Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 50 mph design speed. |
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. |

61. VA Route 625 - Sycolin Road

| | |
|--------------|--|
| Segment | VA Route 659 (Belmont Ridge Road) northwest to Battlefield Parkway |
| Policy Areas | Suburban (Ashburn), Transition, Leesburg JLMA, Town of Leesburg |

Existing Condition

| | |
|--------------------|--|
| Functional Class | Minor Collector |
| Lanes/Right of Way | 2-4/Varies |
| Description | R2/U4M. Local access undivided rural and urban collector. Four-lane divided (U4M) section between Tolbert Lane and Battlefield Parkway in Town of Leesburg. Design speed varies. |

Ultimate Condition

| | |
|--------------------|---|
| Functional Class | Major Collector |
| Lanes/Right of Way | 4/90 feet – Additional ROW may be needed for interchange(s), turn lanes and bicycle/pedestrian facilities. ROW width within Town of Leesburg determined by Town. |
| Description | U4M. Controlled access median divided urban collector. Grade-separated interchange at westernmost crossing of VA Route 267 (Dulles Greenway). Road to be realigned north of the Sycolin Creek bridge to |

accommodate planned runway extension at Leesburg Executive Airport. Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 40 mph design speed.

Bicycle/Pedestrian Facilities Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements; bicycle and pedestrian facilities within Town of Leesburg subject to Town review.

62. VA Route 625 - Sycolin Road

Segment Battlefield Parkway north to VA Route 7/US Route 15 (Leesburg Bypass)

Policy Area Town of Leesburg

Existing Condition

Functional Class Minor Collector

Lanes/Right of Way 2-4/Varies

Description R2/U4. Local access undivided rural and urban collector. Design speed varies.

Ultimate Condition

Functional Class Minor Collector

Lanes/Right of Way 4/ROW determined by Town of Leesburg – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities

Description U4. Local access undivided urban collector. Bridge over VA Route 7/US Route 15 (Leesburg Bypass); existing intersection/at-grade access to/from bypass terminated. Left and right turn lanes required at major intersections. Design speed determined by VDOT and Town of Leesburg.

Bicycle/Pedestrian Facilities Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements; bicycle and pedestrian facilities subject to Town of Leesburg review.

63. VA Route 634 / VA Route 634 Extended – Moran Road/Belfort Park Drive

Segment VA Route 846 Extended (Sterling Boulevard) to VA Route 868 (Davis Drive)

Policy Area Suburban (Sterling)

Existing Condition

Existing Segment VA Route 789 (Lockridge Road) northeast to just west of VA Route 28 (Sully Road); VA Route 636 (Shaw Road) to VA Route 868 (Davis Drive)

Functional Class Major Collector

| | |
|--------------------|---|
| Lanes/Right of Way | 2-4/Varies |
| Description | R2/U4. Local access undivided rural and urban collector. Design Speed Varies. |

Ultimate Condition

| | |
|-------------------------------|--|
| Functional Class | Minor Collector |
| Lanes/Right of Way | 4/70 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities |
| Description | U4. Local access undivided urban collector. Will follow a new alignment east of VA Route 1036 (Pacific Boulevard) intersection with a bridge of VA Route 28 (Sully Road) to VA Route 636 (Shaw Road). Left and right turn lanes required at major intersections. |
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements |

64. VA Route 636 - Shaw Road

| | |
|-------------|--|
| Segment | VA Route 209 (Innovation Avenue) north to VA Route 606 (Old Ox Road) |
| Policy Area | Suburban (Sterling) |

Existing Condition

| | |
|--------------------|--|
| Existing Segment | Just north of VA Route 209 (Innovation Avenue) north to VA Route 606 (Old Ox Road) |
| Functional Class | Local/Secondary Road |
| Lanes/Right of Way | 2/Varies |
| Description | R2. Local access undivided rural secondary road. Design speed varies. |

Ultimate Condition

| | |
|-------------------------------|---|
| Functional Class | Minor Collector |
| Lanes/Right of Way | 4/70 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities |
| Description | U4. Local access undivided urban collector. Left and right turn lanes required at major intersections. 40 mph design speed. Refer to Note G on the CTP Map for additional information regarding this roadway. |
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. |

65. VA Route 636 - Shaw Road

| | |
|---------|---|
| Segment | VA Route 606 (Old Ox Road) north to VA Route 634 Extended (Moran Road/Belfort Park Drive) |
|---------|---|

| | |
|-------------------------------|---|
| Policy Area | Suburban (Sterling) |
| Existing Condition | |
| Functional Class | Minor Collector |
| Lanes/Right of Way | 2-4/Varies |
| Description | R2/U4. Local access undivided rural and urban collector. Design speed varies. |
| Ultimate Condition | |
| Functional Class | Minor Collector |
| Lanes/Right of Way | 4/70 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities |
| Description | U4. Local access undivided urban collector. Left and right turn lanes required at major intersections. 40 mph design speed. |
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. |

66. VA Route 637 - Cascades Parkway

| | |
|------------------------------------|--|
| Segment | VA Route 625 (Church Road) north to VA Route 1793 (Nokes Boulevard)/VA Route 637 (Potomac View Road) |
| Policy Area | Suburban (Sterling) |
| Existing/Ultimate Condition | |
| Functional Class | Major Collector |
| Lanes/Right of Way | 4/90 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities |
| Description | U4M. Controlled access median divided urban collector. Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 40 mph design speed. |
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. |

67. VA Route 637 - Potomac View Road

| | |
|------------------------------------|--|
| Segment | VA Route 1794 (Cascades Parkway) at VA Route 1793 (Nokes Boulevard) east and north to just south of Benedict Drive/VA Route 1010 (Connemara Drive) |
| Policy Area | Suburban (Sterling) |
| Existing/Ultimate Condition | |
| Functional Class | Minor Collector |

| | |
|-------------------------------|--|
| Lanes/Right of Way | 2/50 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities |
| Description | R2. Local access undivided rural collector. Left and right turn lanes recommended at major intersections. 40 mph design speed. |
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. |

68. VA Route 637 - Potomac View Road

| | |
|-------------|---|
| Segment | Just south of Benedict Drive/VA Route 1010 (Connemara Drive) north to VA Route 7 (Harry Byrd Highway) |
| Policy Area | Suburban (Sterling) |

Existing/Ultimate Condition

| | |
|-------------------------------|---|
| Functional Class | Minor Collector |
| Lanes/Right of Way | 4/90 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities |
| Description | U4/U4M. Local access undivided and median divided urban collector. U4M section for short segment just south of VA Route 7 (Harry Byrd Highway); four-lane undivided (U4) section elsewhere. Left and right turn lanes required at all intersections. 40 mph design speed. |
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. |

69. VA Route 637 - Potomac View Road

| | |
|-------------|--|
| Segment | VA Route 7 (Harry Byrd Highway) north to VA Route 1582 (Algonkian Parkway) |
| Policy Area | Suburban (Potomac) |

Existing/Ultimate Condition

| | |
|-------------------------------|--|
| Functional Class | Major Collector |
| Lanes/Right of Way | 4/110 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities |
| Description | R4M/U4M. Controlled access median divided rural and urban collector. Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 45 mph design speed. |
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. |

70. VA Route 639 Relocated - Willard Road

| | |
|---------|---|
| Segment | Washington Dulles International Airport property south to US Route 50 (John Mosby Highway) (opposite VA Route 2200 (Tall Cedars Parkway)) |
|---------|---|

| | |
|-------------------------------|---|
| Policy Area | Suburban (Dulles) |
| Existing Condition | |
| Functional Class | Local/Secondary Road |
| Lanes/Right of Way | 2/Varies |
| Description | R2. Local access undivided rural secondary road. Design speed varies. |
| Ultimate Condition | |
| Functional Class | Major Collector |
| Lanes/Right of Way | 4/90 feet – Additional ROW may be needed for interchange(s), turn lanes and bicycle/pedestrian facilities |
| Description | U4M. Controlled access median divided urban collector. Grade-separated interchange at US Route 50 (John Mosby Highway); Willard Road to be relocated east of existing roadway between Quarry Road (US Route 50 North Collector Road) and US Route 50 to align with VA Route 2200 (Tall Cedars Parkway) interchange. Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 40 mph design speed. |
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. |

71. VA Route 640 - Waxpool Road

| | |
|---------------------------|--|
| Segment | VA Route 625 (Farmwell Road) west to Faulkner Parkway (Ryan Bypass) |
| Policy Area | Suburban (Ashburn) |
| Existing Condition | |
| Functional Class | Minor Collector |
| Lanes/Right of Way | 2-4/Varies |
| Description | R2/R4/U4M. Local access undivided rural and median divided urban collector. Four-lane divided (U4M) section between VA Route 625-(Farmwell Road) and Unbridled Way. Design speed varies. |
| Ultimate Condition | |
| Functional Class | Major Collector |
| Lanes/Right of Way | 4/90 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities |
| Description | U4M. Controlled access median divided urban collector. Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 40 mph design speed. |

| | |
|-------------------------------|---|
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. |
|-------------------------------|---|

72. VA Route 640 – Faulkner Parkway (Ryan Bypass)/Broadlands Boulevard

| | |
|---------|--|
| Segment | VA Route 640 (Waxpool Road) northwest to VA Route 659 (Belmont Ridge Road) |
|---------|--|

| | |
|-------------|--------------------|
| Policy Area | Suburban (Ashburn) |
|-------------|--------------------|

Existing/Ultimate Condition

| | |
|--------------------|---|
| Functional Class | Major Collector |
| Lanes/Right of Way | 4/90 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities |

| | |
|-------------|---|
| Description | U4M. Controlled access median divided urban collector. Passes under VA Route 267 (Dulles Greenway). Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 50 mph design speed. |
|-------------|---|

| | |
|-------------------------------|---|
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. |
|-------------------------------|---|

73. VA Route 641 - Ashburn Road

| | |
|---------|---|
| Segment | VA Route 1061 (Russell Branch Parkway) south to VA Route 647 (Stubble Road), just north of the Village of Ashburn |
|---------|---|

| | |
|-------------|--------------------|
| Policy Area | Suburban (Ashburn) |
|-------------|--------------------|

Existing Condition

| | |
|--------------------|---|
| Functional Class | Minor Collector |
| Lanes/Right of Way | 3-4/Varies |
| Description | U4. Local access undivided urban collector. Only one southbound lane in some segments. Design speed varies. |

Ultimate Condition

| | |
|-------------------------------|---|
| Functional Class | Minor Collector |
| Lanes/Right of Way | 4/70 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities |
| Description | U4. Local access undivided urban collector. Left and right turn lanes required at major intersections. 40 mph design speed. |
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. |

74. VA Route 641 - Ashburn Road

| | |
|---------|--|
| Segment | VA Route 647 (Stubble Road) south through Village of Ashburn to Beaverdam Run bridge |
|---------|--|

| | |
|-------------------------------|--|
| Policy Area | Suburban (Ashburn) |
| Existing Condition | |
| Functional Class | Minor Collector |
| Lanes/Right of Way | 2/Varies |
| Description | R2. Local access undivided rural collector. Design speed varies. |
| Ultimate Condition | |
| Functional Class | Minor Collector |
| Lanes/Right of Way | 2/50 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities |
| Description | U2. Local access undivided urban collector. Left and right turn lanes recommended at major intersections. 40 mph design speed. |
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. |

75. VA Route 641 - Ashburn Road

| | |
|-------------------------------|---|
| Segment | Beaverdam Run bridge south to VA Route 640 (Waxpool Road) |
| Policy Area | Suburban |
| Existing Condition | |
| Functional Class | Minor Collector |
| Lanes/Right of Way | 2-4/Varies |
| Description | R2/U4. Local access undivided rural and urban collector. Design speed varies. |
| Ultimate Condition | |
| Functional Class | Minor Collector |
| Lanes/Right of Way | 4/70 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities |
| Description | U4. Local access undivided urban collector. Left and right turn lanes required at major intersections. 40 mph design speed. |
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. |

76. VA Route 642 - Hay Road

| | |
|-------------|---|
| Segment | VA Route 659 (Belmont Ridge Road) east to approximately 3,200 feet east of VA Route 901 (Claiborne Parkway) |
| Policy Area | Suburban (Ashburn) |

Existing/Ultimate Condition

| | |
|-------------------------------|---|
| Functional Class | Minor Collector |
| Lanes/Right of Way | 4/70 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities |
| Description | U4. Local access undivided urban collector. Left and right turn lanes required at major intersections. 40 mph design speed. |
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. |

77. VA Route 642 - Hay Road

| | |
|-------------|---|
| Segment | Approximately 3,200 feet east of VA Route 901 (Claiborne Parkway) east to VA Route 641 (Ashburn Road) |
| Policy Area | Suburban (Ashburn) |

Existing Condition

| | |
|--------------------|---|
| Functional Class | Minor Collector |
| Lanes/Right of Way | 2/Varies |
| Description | R2. Local access undivided rural collector road. Design speed varies. |

Ultimate Condition

| | |
|-------------------------------|--|
| Functional Class | Minor Collector |
| Lanes/Right of Way | 2/50 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities |
| Description | U2. Local access undivided urban collector. Left and right turn lanes recommended at major intersections. 40 mph design speed. |
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. |

78. VA Route 643 - Shellhorn Road

| | |
|-------------|---|
| Segment | VA Route 640 (Waxpool Road) south to VA Route 772 (Ashburn Village Boulevard) |
| Policy Area | Suburban (Ashburn) |

Existing/Ultimate Condition

| | |
|--------------------|---|
| Functional Class | Major Collector |
| Lanes/Right of Way | 4/70 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities |
| Description | U4. Local access undivided and divided urban collector. Left and right turn lanes required at major intersections. 40 mph design speed. |

| | |
|-------------------------------|---|
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. |
|-------------------------------|---|

79. VA Route 643 - Shellhorn Road

| | |
|---------|---|
| Segment | VA Route 772 (Ashburn Village Boulevard) southeast to VA Route 607 (Loudoun County Parkway) |
|---------|---|

| | |
|-------------|--------------------|
| Policy Area | Suburban (Ashburn) |
|-------------|--------------------|

Existing/Ultimate Condition

| | |
|-------------------------------|--|
| Functional Class | Major Collector |
| Lanes/Right of Way | 4/90 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities |
| Description | U4M. Controlled access median divided urban collector. Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 40 mph design speed. |
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. |

80. VA Route 643 - Shellhorn Road

| | |
|---------|--|
| Segment | VA Route 607 (Loudoun County Parkway) to VA Route 789 (Lockridge Road) |
|---------|--|

| | |
|-------------|------------------------------|
| Policy Area | Suburban (Ashburn, Sterling) |
|-------------|------------------------------|

Ultimate Condition

| | |
|-------------------------------|--|
| Functional Class | Major Collector |
| Lanes/Right of Way | 4/110 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities |
| Description | U4M. Controlled access median divided urban collector. Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 35 mph design speed. |
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. |

81. VA Route 643 - Shellhorn Road

| | |
|---------|---|
| Segment | VA Route 789 (Lockridge Road) to VA Route 846 Extended (Sterling Boulevard) at VA Route 1072 (Randolph Drive) |
|---------|---|

| | |
|-------------|---------------------|
| Policy Area | Suburban (Sterling) |
|-------------|---------------------|

Ultimate Condition

| | |
|------------------|-----------------|
| Functional Class | Major Collector |
|------------------|-----------------|

| | |
|-------------------------------|--|
| Lanes/Right of Way | 4/110 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities |
| Description | U4M. Controlled access median divided urban collector. Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 35 mph design speed. Provides access to the planned Loudoun Gateway Metrorail station. |
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. |

82. VA Route 645 - Croson Lane

| | |
|-------------|---|
| Segment | VA Route 659 (Belmont Ridge Road) east to Existing VA Route 772 (Old Ryan Road) |
| Policy Area | Suburban (Ashburn) |

Existing Condition

| | |
|--------------------|---|
| Functional Class | Major Collector |
| Lanes/Right of Way | 2/Varies |
| Description | U2. Controlled access undivided urban collector. Design speed varies. |

Ultimate Condition

| | |
|-------------------------------|--|
| Functional Class | Major Collector |
| Lanes/Right of Way | 4/120 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities |
| Description | U4M. Controlled access median divided urban collector. Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 40 mph design speed. |
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. |

83. VA Route 645 - Croson Lane

| | |
|-------------|--|
| Segment | Existing VA Route 772 (Old Ryan Road) to Moorefield Boulevard in Moorefield Station. |
| Policy Area | Suburban (Ashburn) |

Ultimate Condition

| | |
|--------------------|---|
| Functional Class | Minor Collector |
| Lanes/Right of Way | 3/70 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities |
| Description | U3. Local access undivided urban collector. Left and right turn lanes required at all intersections. 30 mph design speed. |

| | |
|-------------------------------|---|
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. |
|-------------------------------|---|

84. VA Route 645 Extended - Westwind Drive

| | |
|-------------|--|
| Segment | VA Route 607 (Loudoun County Parkway) (opposite Moorefield Boulevard) south to Broad Run |
| Policy Area | Suburban (Ashburn) |

Existing/Ultimate Condition

| | |
|-------------------------------|---|
| Existing Segment | VA Route 1950 (Loudoun County Parkway) south to 1,000 feet south of State Street |
| Functional Class | Major Collector |
| Lanes/Right of Way | 4/120 feet – Additional ROW may be needed for interchange(s), turn lanes and bicycle/pedestrian facilities |
| Description | U4M. Controlled access median divided urban collector. Bridge over Broad Run. Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 40 mph design speed. |
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. |

85. VA Route 645 Extended - Westwind Drive/Ladbrook Drive

| | |
|-------------|---|
| Segment | Broad Run south to VA Route 606 (Old Ox Road) |
| Policy Area | Suburban (Dulles) |

Existing Condition

| | |
|-------------------------------|--|
| Existing Segment | Ladbrook Drive – 1,700 feet north of VA Route 606 (Old Ox Road) to VA Route 606 (Old Ox Road) |
| Functional Class | Major Collector |
| Lanes/Right of Way | 4/70 feet – Additional ROW may be needed for interchange(s), turn lanes and bicycle/pedestrian facilities |
| Description | U4. Local access urban collector. Bridge over Broad Run. Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 40 mph design speed. |
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. |

Ultimate Condition

| | |
|------------------|-----------------|
| Functional Class | Major Collector |
|------------------|-----------------|

| | |
|-------------------------------|---|
| Lanes/Right of Way | 4/70 feet – Additional ROW may be needed for interchange(s), turn lanes and bicycle/pedestrian facilities |
| Description | U4. Local access urban collector. Bridge over Broad Run. Grade-separated interchange at VA Route 606 (Old Ox Road). Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 40 mph design speed. |
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. |

86. VA Route 653 - Cochran Mill Road

| | |
|--------------|---|
| Segment | Russell Branch Parkway southwest to VA Route 625 (Sycolin Road) |
| Policy Areas | Leesburg JLMA, Transition |

Existing Condition

| | |
|--------------------|---|
| Functional Class | Local/Secondary Road |
| Lanes/Right of Way | 2-4/Varies |
| Description | R2/U4. Local access undivided rural and urban secondary road. Four-lane (U4) section between vicinity of future Trailview Boulevard intersection and just north of the W & OD Trail. Design speed varies. |

Ultimate Condition

| | |
|-------------------------------|---|
| Functional Class | Minor Collector |
| Lanes/Right of Way | 4/70 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities |
| Description | U4. Local access undivided urban collector. Segment between Sycolin Creek and VA Route 625 (Sycolin Road) to be realigned to avoid floodplain and will intersect Sycolin Road to the south of the existing Cochran Mill Road/Sycolin Road intersection. Left and right turn lanes required at major intersections. 40 mph design speed. |
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. |

87. VA Route 653 Relocated - Crosstrail Boulevard

| | |
|---------|---|
| Segment | VA Route 7 (East Market Street) interchange (opposite VA Route 773 (River Creek Parkway)) southwest to the VA Route 267 (Dulles Greenway) interchange |
|---------|---|

| | |
|--------------|---------------------------------|
| Policy Areas | Town of Leesburg, Leesburg JLMA |
|--------------|---------------------------------|

Existing/Interim Condition

| | |
|-------------------|---|
| Existing Segments | VA Route 7 (East Market Street) interchange southwest to Russell Branch Parkway; VA Route 267 (Dulles Greenway) interchange (on Existing VA Route 653 (Shreve Mill Road)) |
| Functional Class | Major Collector |

| | |
|-------------------------------|---|
| Lanes/Right of Way | 4/120 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities |
| Description | U4M. Controlled access median divided urban collector. Grade-separated interchanges at VA Route 7 (East Market Street) and at VA Route 267 (Dulles Greenway). Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 40 mph design speed. |
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. |
| Ultimate Condition | |
| Functional Class | Major Collector |
| Lanes/Right of Way | 6/120 feet – Additional ROW may be needed for interchange(s), turn lanes and bicycle/pedestrian facilities. ROW width within Town of Leesburg determined by Town. |
| Description | U6M. Controlled access median divided urban collector. Grade-separated interchanges at VA Route 7 (East Market Street) and at VA Route 267 (Dulles Greenway). Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 40 mph design speed. |
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements; bicycle and pedestrian facilities within Town of Leesburg subject to Town review. |

88. VA Route 653 Relocated - Crosstrail Boulevard

| | |
|-------------------------------|---|
| Segment | VA Route 267 (Dulles Greenway) interchange west to VA Route 621 (Evergreen Mills Road) |
| Policy Area | Rural |
| Ultimate Condition | |
| Functional Class | Major Collector |
| Lanes/Right of Way | 4/120 feet – Additional ROW may be needed for interchange(s), turn lanes and bicycle/pedestrian facilities |
| Description | U4M. Controlled access median divided urban collector. Road to align with existing grade-separated interchange at VA Route 267 (Dulles Greenway). Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 40 mph design speed. |
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. |

89. VA Route 659 - Belmont Ridge Road

| | |
|---------|--|
| Segment | VA Route 2401 (Riverside Parkway) south to VA Route 7 (Harry Byrd Highway) |
|---------|--|

| | |
|--|---|
| Policy Area | Suburban (Ashburn) |
| Existing/Interim Condition | |
| Functional Class | Major Collector |
| Lanes/Right of Way | 4/120 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities |
| Description | U4M. Controlled access median divided urban collector. Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 50 mph design speed. |
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. |
| Ultimate Condition | |
| Functional Class | Major Collector |
| Lanes/Right of Way | 6/120 feet – Additional ROW may be needed for interchange(s), turn lanes and bicycle/pedestrian facilities |
| Description | U6M. Controlled access median divided urban collector. Grade-separated interchange at VA Route 7 (Harry Byrd Highway). Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 50 mph design speed. |
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. |
| 90. VA Route 659 - Belmont Ridge Road | |
| Segment | VA Route 7 (Harry Byrd Highway) south to VA Route 645 Croson Lane |
| Policy Area | Suburban (Ashburn) |
| Existing Condition | |
| Functional Class | Major Collector |
| Lanes/Right of Way | 2-4/Varies |
| Description | R2/U4M. Local access undivided rural and divided urban collector. Grade-separated interchange at VA Route 267 (Dulles Greenway). Four-lane divided (U4M) section from just north of VA Route 642 (Hay Road) to VA Route 267 (Dulles Greenway) interchange and from VA Route 267 (Dulles Greenway) interchange to just south of Broadlands Boulevard. Design speed varies. |
| Ultimate Condition | |
| Functional Class | Minor Arterial |

| | |
|-------------------------------|---|
| Lanes/Right of Way | 4/150 feet – Additional ROW may be needed for interchange(s), turn lanes and bicycle/pedestrian facilities |
| Description | U4M. Controlled access median divided urban arterial. Grade-separated interchanges at VA Route 7 (Harry Byrd Highway) and VA Route 267 (Dulles Greenway). Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 50 mph design speed. |
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. |

91. VA Route 659 – Belmont Ridge Road

| | |
|-------------|--|
| Segment | VA Route 645 (Croson Lane) south to VA Route 659 Relocated (Northstar Boulevard) |
| Policy Area | Suburban (Ashburn) |

Existing/Interim Condition

| | |
|--------------------|---|
| Functional Class | Minor Arterial |
| Lanes/Right of Way | 4/120 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities |
| Description | U4M. Controlled access median divided urban arterial. Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 50 mph design speed. |

Ultimate Condition

| | |
|-------------------------------|---|
| Functional Class | Minor Arterial |
| Lanes/Right of Way | 6/150 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities |
| Description | U6M. Controlled access median divided urban arterial. Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 50 mph design speed. |
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. |

92. VA Route 659 - Belmont Ridge Road

| | |
|-------------|---|
| Segment | VA Route 659 Relocated (Northstar Boulevard) south to VA Route 621 (Evergreen Mills Road) |
| Policy Area | Suburban (Ashburn, Dulles) |

Existing Condition

| | |
|--------------------|-----------------|
| Functional Class | Major Collector |
| Lanes/Right of Way | 2-4/Varies |

| | |
|-------------------------------|---|
| Description | R2/U4/U4M. Local access undivided rural and urban collector and divided urban collector. Four-lane undivided (U4) section north of VA Route 772 (Ryan Road); four-lane divided (U4M) section in Brambleton development south of VA Route 772 (Ryan Road). Design speed varies. |
| Ultimate Condition | |
| Functional Class | Minor Collector |
| Lanes/Right of Way | 4/120 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities |
| Description | U4/U4M. Controlled access undivided and divided urban collector. Four-lane undivided (U4) section north of VA Route 772 (Ryan Road); four-lane divided (U4M) section south of VA Route 772 (Ryan Road). Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. Reclassified as a minor collector when VA Route 659 Relocated (Northstar Boulevard) is open to traffic south to US Route 50 (John Mosby Highway). 40 mph design speed. |
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. |

93. VA Route 659 - Gum Spring Road Relocated (VA Route 606 Extended / West Spine Road)

| | |
|-------------------------------|---|
| Segment | US Route 50 (John Mosby Highway) south to VA Route 2200 (Tall Cedars Parkway) |
| Policy Area | Suburban (Dulles) |
| Existing Condition | |
| Functional Class | Major Collector |
| Lanes/Right of Way | ½ of a four-lane divided (U4M) section (northbound lanes); ROW varies – Additional ROW necessary for future southbound lanes. |
| Description | ½ of a U4M section. Road currently operates as one-lane, one-way northbound to eastbound US Route 50 (John Mosby Highway) only. Controlled access median divided urban collector. Intersection with US Route 50 (John Mosby Highway) opposite future Arcola Boulevard (approximately 1,000 feet east of the Existing VA Route 659 (Gum Spring Road)/US Route 50 (John Mosby Highway) intersection). Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 50 mph design speed. |
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. |
| Ultimate Condition | |
| Functional Class | Major Collector |
| Lanes/Right of Way | 4/120 feet – Additional ROW may be needed for interchange(s), turn lanes and bicycle/pedestrian facilities |

| | |
|-------------------------------|--|
| Description | U4M. Controlled access median divided urban collector. Grade-separated interchange at US Route 50 (John Mosby Highway). US Route 50 (John Mosby Highway) interchange to be located approximately 1,000 feet east of the Existing VA Route 659 (Gum Spring Road)/US Route 50 (John Mosby Highway) intersection. Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 50 mph design speed. |
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. |

94. VA Route 659 - Gum Spring Road (VA Route 606 Extended / West Spine Road)

| | |
|-------------|---|
| Segment | VA Route 2200 (Tall Cedars Parkway) south to VA Route 620 (Braddock Road) |
| Policy Area | Suburban (Dulles) |

Existing/Ultimate Condition

| | |
|-------------------------------|--|
| Functional Class | Major Collector |
| Lanes/Right of Way | 4/120 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities |
| Description | U4M. Controlled access median divided urban collector. Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 50 mph design speed. |
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. |

95. VA Route 659 - Gum Spring Road (VA Route 606 Extended / West Spine Road)

| | |
|-------------|--|
| Segment | VA Route 620 (Braddock Road) south to Prince William County Line |
| Policy Area | Transition |

Existing Condition

| | |
|--------------------|--|
| Functional Class | Major Collector |
| Lanes/Right of Way | 2/Varies |
| Description | R2. Local access undivided rural collector. Design speed varies. |

Ultimate Condition

| | |
|--------------------|--|
| Functional Class | Major Collector |
| Lanes/Right of Way | 4/120 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities |
| Description | R4M. Controlled access median divided rural collector. Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 50 mph design speed. |

| | |
|-------------------------------|---|
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. |
|-------------------------------|---|

96. VA Route 659 Relocated - Northstar Boulevard

| | |
|---------|---|
| Segment | VA Route 659 (Belmont Ridge Road) just south of VA Route 645 (Croson Lane) intersection south to VA Route 620 (Braddock Road) |
|---------|---|

| | |
|--------------|--|
| Policy Areas | Suburban (Ashburn, Dulles), Transition |
|--------------|--|

Existing Condition

| | |
|-------------------|--|
| Existing Segments | VA Route 659 (Belmont Ridge Road) south to future VA Route 621 Relocated (Shreveport Drive) in Brambleton development; VA Route 2200 (Tall Cedars Parkway) south to VA Route 620 (Braddock Road) |
|-------------------|--|

| | |
|------------------|----------------|
| Functional Class | Minor Arterial |
|------------------|----------------|

| | |
|--------------------|--|
| Lanes/Right of Way | 2-4/Varies – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities |
|--------------------|--|

| | |
|-------------|---|
| Description | U2/U4M. Controlled access median divided (U4M) urban arterial from VA Route 659 (Belmont Ridge Road) south to future VA Route 621 Relocated (Shreveport Drive). Two-lane (U2) section from VA Route 2200 (Tall Cedars Parkway) south to VA Route 620 (Braddock Road). Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 50 mph design speed. |
|-------------|---|

Interim Condition

| | |
|------------------|----------------|
| Functional Class | Minor Arterial |
|------------------|----------------|

| | |
|--------------------|---|
| Lanes/Right of Way | 4/120 feet— Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities |
|--------------------|---|

| | |
|-------------|---|
| Description | U4M. Controlled access median divided urban arterial. Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 50 mph design speed. |
|-------------|---|

Ultimate Condition

| | |
|------------------|----------------|
| Functional Class | Minor Arterial |
|------------------|----------------|

| | |
|--------------------|--|
| Lanes/Right of Way | 6/120 feet – Additional ROW may be needed for interchange(s), turn lanes and bicycle/pedestrian facilities |
|--------------------|--|

| | |
|-------------|--|
| Description | U6M. Controlled access median divided urban arterial. Grade-separated interchange at US Route 50 (John Mosby Highway). Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 60 mph design speed. |
|-------------|--|

| | |
|-------------------------------|---|
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. |
|-------------------------------|---|

97. VA Route 659 Relocated - Northstar Boulevard

Segment VA Route 620 (Braddock Road) south to Prince William County Line

Policy Areas Transition

Ultimate Condition

Functional Class Minor Arterial

Lanes/Right of Way 6/150 feet – Additional ROW may be needed for interchange(s), turn lanes and bicycle/pedestrian facilities

Description U6M. Controlled access median divided urban arterial. Will follow portions of VA Route 705 (Lightridge Farm Road) alignment. Road to connect with an extension of the VA Route 234 Bypass in Prince William County. Left and right turn lanes required at all intersections. 60 mph design speed.

Bicycle/Pedestrian Facilities Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.

98. VA Route 662 - Clarkes Gap Road

Segment VA Route 9 (Charles Town Pike) north to VA Route 665 (High Street) in Village of Waterford

Policy Area Rural

Existing Condition

Functional Class Major Collector / Virginia Byway

Lanes/Right of Way 2/Varies

Description R2. Local access undivided rural collector. Design speed varies.

Ultimate Condition

Functional Class Major Collector / Virginia Byway

Lanes/Right of Way 2/ROW subject to DTCI review – Additional ROW may be needed for turn lanes

Description R2. Local access undivided rural collector. Left and right turn lanes provided where required for safety. Design speed determined by VDOT and DTCI. Improvements will be constructed in conformance with the Heritage Resource Policies of the CTP and the Scenic Areas and Corridor Policies of the Revised General Plan and the Heritage Preservation Plan.

Bicycle/Pedestrian Facilities Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.

99. VA Route 663 - Taylorstown Road

Segment VA Route 665 (Loyalty Road) in Village of Taylorstown west to VA Route 663 (Downey Mill Road)/VA Route 668 (Taylorstown Road) intersection just west of Catoctin Creek bridge

| | |
|-------------------------------|---|
| Policy Area | Rural |
| Existing Condition | |
| Functional Class | Major Collector |
| Lanes/Right of Way | 2/Varies |
| Description | R2. Local access undivided rural collector. Design speed varies. |
| Ultimate Condition | |
| Functional Class | Major Collector |
| Lanes/Right of Way | 2/ROW subject to DTCI review – Additional ROW may be needed for turn lanes |
| Description | R2. Local access undivided rural collector. Left and right turn lanes provided where required for safety. Design speed determined by VDOT and DTCI. Improvements will be constructed in conformance with the Heritage Resource Policies of the CTP and the Scenic Areas and Corridor Policies of the Revised General Plan and the Heritage Preservation Plan. |
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. |

100. VA Route 665 - High Street / Loyalty Road

| | |
|---------------------------|---|
| Segment | VA Route 662 (Clarkes Gap Road/Factory Street) north and east through Village of Waterford to VA Route 666 (Browns Lane) |
| Policy Area | Rural |
| Existing Condition | |
| Functional Class | Major Collector / Virginia Byway |
| Lanes/Right of Way | 2/Varies |
| Description | R2. Local access undivided rural collector. Design speed varies. |
| Ultimate Condition | |
| Functional Class | Major Collector / Virginia Byway |
| Lanes/Right of Way | 2/ROW subject to DTCI review – Additional ROW may be needed for turn lanes |
| Description | R2. Local access undivided rural collector. Left and right turn lanes provided where required for safety. Design speed determined by VDOT and DTCI. Improvements will be constructed in conformance with the Heritage Resource Policies of the CTP and the Scenic Areas and Corridor Policies of the Revised General Plan and the Heritage Preservation Plan. |

| | |
|-------------------------------|---|
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. |
|-------------------------------|---|

101. VA Route 665 - Loyalty Road

| | |
|---------|--|
| Segment | VA Route 666 (Browns Lane) just north of Village of Waterford north to VA Route 663 (Taylorstown Road) in Village of Taylorstown |
|---------|--|

| | |
|-------------|-------|
| Policy Area | Rural |
|-------------|-------|

Existing Condition

| | |
|------------------|----------------------------------|
| Functional Class | Major Collector / Virginia Byway |
|------------------|----------------------------------|

| | |
|--------------------|----------|
| Lanes/Right of Way | 2/Varies |
|--------------------|----------|

| | |
|-------------|--|
| Description | R2. Local access undivided rural collector. Design speed varies. |
|-------------|--|

Ultimate Condition

| | |
|------------------|----------------------------------|
| Functional Class | Major Collector / Virginia Byway |
|------------------|----------------------------------|

| | |
|--------------------|--|
| Lanes/Right of Way | 2/ROW subject to DTCI review – Additional ROW may be needed for turn lanes |
|--------------------|--|

| | |
|-------------|---|
| Description | R2. Local access undivided rural collector. Left and right turn lanes provided where required for safety. Design speed determined by VDOT and DTCI. Improvements will be constructed in conformance with the Heritage Resource Policies of the CTP and the Scenic Areas and Corridor Policies of the Revised General Plan and the Heritage Preservation Plan. |
|-------------|---|

| | |
|-------------------------------|---|
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. |
|-------------------------------|---|

102. VA Route 668 - Taylorstown Road

| | |
|---------|---|
| Segment | VA Route 663 (Taylorstown Road/Downey Mill Road) just west of Catoctin Creek bridge in Village of Taylorstown north to VA Route 672 (Lovettsville Road) |
|---------|---|

| | |
|-------------|-------|
| Policy Area | Rural |
|-------------|-------|

Existing Condition

| | |
|------------------|-----------------|
| Functional Class | Major Collector |
|------------------|-----------------|

| | |
|--------------------|----------|
| Lanes/Right of Way | 2/Varies |
|--------------------|----------|

| | |
|-------------|--|
| Description | R2. Local access undivided rural collector. Design speed varies. |
|-------------|--|

Ultimate Condition

| | |
|------------------|-----------------|
| Functional Class | Major Collector |
|------------------|-----------------|

| | |
|--------------------|---|
| Lanes/Right of Way | 2/ ROW subject to DTCI review – Additional ROW may be needed for turn lanes |
|--------------------|---|

| | |
|-------------------------------|---|
| Description | R2. Local access undivided rural collector. Left and right turn lanes provided where required for safety. Design speed determined by VDOT and DTCI. Improvements will be constructed in conformance with the Heritage Resource Policies of the CTP and the Scenic Areas and Corridor Policies of the Revised General Plan and the Heritage Preservation Plan. |
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. |

103. VA Route 671 - Harpers Ferry Road

| | |
|---------------------------|---|
| Segment | VA Route 9 (Charles Town Pike) north to US Route 340 (Jefferson Pike) |
| Policy Area | Rural |
| Existing Condition | |
| Functional Class | Major Collector / Virginia Byway |
| Lanes/Right of Way | 2/Varies |
| Description | R2. Local access undivided rural collector. Design speed varies. |

Ultimate Condition

| | |
|-------------------------------|---|
| Functional Class | Major Collector / Virginia Byway |
| Lanes/Right of Way | 2/ROW subject to DTCI review – Additional ROW may be needed for turn lanes |
| Description | R2. Local access undivided rural collector. Left and right turn lanes provided where required for safety. Design speed determined by VDOT and DTCI. Improvements will be constructed in conformance with the Heritage Resource Policies of the CTP and the Scenic Areas and Corridor Policies of the Revised General Plan and the Heritage Preservation Plan. |
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. |

104. VA Route 672 - Lovettsville Road

| | |
|------------------------------------|--|
| Segment | US Route 15 (James Monroe Highway) west to VA Route 673 (Milltown Road) at Lovettsville Town Limits |
| Policy Area | Rural |
| Existing/Ultimate Condition | |
| Functional Class | Major Collector |
| Lanes/Right of Way | 2/Varies – Additional ROW may be needed for turn lanes |
| Description | R2. Local access undivided rural collector. Left and right turn lanes provided where required for safety. Design speed varies. |

| | |
|-------------------------------|---|
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. |
|-------------------------------|---|

105. VA Route 673 - Broad Way (Lovettsville)

| | |
|---------|--|
| Segment | Existing alignment in Town of Lovettsville |
|---------|--|

| | |
|-------------|----------------------|
| Policy Area | Town of Lovettsville |
|-------------|----------------------|

Existing/Ultimate Condition

| | |
|-------------------------------|---|
| Functional Class | Major Collector |
| Lanes/Right of Way | 2/Varies – Additional ROW may be needed for turn lanes. Ultimate ROW width determined by Town of Lovettsville. |
| Description | R2. Local access undivided rural collector. Left and right turn lanes recommended at major intersections. Design speed varies. |
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements; bicycle and pedestrian facilities subject to Town of Lovettsville review. |

106. VA Route 673 / VA Route 681 - Milltown Road

| | |
|---------|---|
| Segment | VA Route 673 (East Broad Way)/VA Route 672 (Lovettsville Road) at Lovettsville Town Limits south to VA Route 698 (Old Wheatland Road) just west of the Village of Waterford |
|---------|---|

| | |
|-------------|-------|
| Policy Area | Rural |
|-------------|-------|

Existing Condition

| | |
|--------------------|--|
| Functional Class | Major Collector / Virginia Byway |
| Lanes/Right of Way | 2/Varies |
| Description | R2. Local access undivided rural collector. Design speed varies. |

Ultimate Condition

| | |
|-------------------------------|---|
| Functional Class | Major Collector / Virginia Byway |
| Lanes/Right of Way | 2/ROW subject to DTCI review – Additional ROW may be needed for turn lanes |
| Description | R2. Local access undivided rural collector. Left and right turn lanes provided where required for safety. Design speed determined by VDOT and DTCI. Improvements will be constructed in conformance with the Heritage Resource Policies of the CTP and the Scenic Areas and Corridor Policies of the Revised General Plan and the Heritage Preservation Plan. |
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. |

107. VA Route 673 / VA Route 690 - Irish Corner Road / Mountain Road

| | |
|---------|---|
| Segment | Lovettsville Town Limits west and south to VA Route 9 (Charles Town Pike) |
|---------|---|

| | |
|-------------|-------|
| Policy Area | Rural |
|-------------|-------|

Existing Condition

| | |
|------------------|--|
| Functional Class | Major Collector / Virginia Byway (VA Route 690 segment only) |
|------------------|--|

| | |
|--------------------|----------|
| Lanes/Right of Way | 2/Varies |
|--------------------|----------|

| | |
|-------------|--|
| Description | R2. Local access undivided rural collector. Design speed varies. |
|-------------|--|

Ultimate Condition

| | |
|------------------|--|
| Functional Class | Major Collector / Virginia Byway (VA Route 690 segment only) |
|------------------|--|

| | |
|--------------------|--|
| Lanes/Right of Way | 2/ROW subject to DTCI review – Additional ROW may be needed for turn lanes |
|--------------------|--|

| | |
|-------------|---|
| Description | R2. Local access undivided rural collector. Left and right turn lanes provided where required for safety. Design speed determined by VDOT and DTCI. Improvements will be constructed in conformance with the Heritage Resource Policies of the CTP and the Scenic Areas and Corridor Policies of the Revised General Plan and the Heritage Preservation Plan. |
|-------------|---|

| | |
|-------------------------------|---|
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. |
|-------------------------------|---|

108. VA Route 679 - Woodland Road

| | |
|---------|--|
| Segment | VA Route 637 (Cascades Parkway) west to VA Route 1902 (Atlantic Boulevard) |
|---------|--|

| | |
|-------------|---------------------|
| Policy Area | Suburban (Sterling) |
|-------------|---------------------|

Existing/Ultimate Condition

| | |
|------------------|-----------------|
| Functional Class | Minor Collector |
|------------------|-----------------|

| | |
|--------------------|---|
| Lanes/Right of Way | 4/70 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities |
|--------------------|---|

| | |
|-------------|---|
| Description | U4. Local access undivided urban collector. Left and right turn lanes required at major intersections. 40 mph design speed. |
|-------------|---|

| | |
|-------------------------------|---|
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. |
|-------------------------------|---|

109. VA Route 690 - Silcott Springs Road / 32nd Street South

| | |
|---------|---|
| Segment | VA Route 734 (Snickersville Turnpike) north to VA Route 7 Business (West Main Street) |
|---------|---|

| | |
|--------------|--|
| Policy Areas | Rural, Purcellville JLMA, Town of Purcellville |
|--------------|--|

Existing/Ultimate Condition

| | |
|-------------------------------|--|
| Functional Class | Major Collector |
| Lanes/Right of Way | 2/Varies – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities. Ultimate ROW width within Town of Purcellville determined by Town. |
| Description | R2. Local access undivided rural collector. In Rural Policy Area, left and right turn lanes provided where required for safety. In JLMA and Town, left and right turn lanes recommended at major intersections. Design speed varies. |
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements; bicycle and pedestrian facilities within Town of Purcellville subject to Town review. |

110. VA Route 690 - 23rd Street North / 21st Street North / Hillsboro Road

| | |
|--------------|--|
| Segment | VA Route 7 Business (West Main Street) north to VA Route 9 (Charles Town Pike) |
| Policy Areas | Town of Purcellville, Purcellville JLMA, Rural |

Existing Condition

| | |
|--------------------|---|
| Functional Class | Major Collector |
| Lanes/Right of Way | 2/Varies |
| Description | R2. Local access undivided rural collector. Roundabout at VA Route 711 (Allder School Road). Design speed varies. |

Ultimate Condition

| | |
|-------------------------------|--|
| Functional Class | Major Collector |
| Lanes/Right of Way | 2/50 feet – Additional ROW may be needed for turn lanes. ROW width within Town of Purcellville determined by Town. |
| Description | R2. Local access undivided rural collector. Grade-separated interchange at VA Route 7 Bypass. Roundabouts at VA Route 711 (Allder School Road) and VA Route 9 (Charles Town Pike). Location of interchange to be determined by further study and in consultation with the Town of Purcellville and VDOT. In Town and JLMA, left and right turn lanes recommended at major intersections. In Rural Policy Area, left and right turn lanes provided where required for safety. Design speed determined by VDOT, Town of Purcellville and DTCL. |
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements; bicycle and pedestrian facilities within Town of Purcellville subject to Town review. |

111. VA Route 698 / VA Route 662 / VA Route 785 – Old Wheatland Road / 1st Street / Main Street (Waterford)

| | |
|---------|---|
| Segment | VA Route 681 (Milltown Road) southeast through Village of Waterford to VA Route 665 (High Street) |
|---------|---|

| | |
|-------------------------------|---|
| Policy Area | Rural |
| Existing Condition | |
| Functional Class | Major Collector / Virginia Byway |
| Lanes/Right of Way | 2/Varies |
| Description | R2. Local access undivided rural collector. Design speed varies. |
| Ultimate Condition | |
| Functional Class | Major Collector / Virginia Byway |
| Lanes/Right of Way | 2/ROW subject to DTCI review – Additional ROW may be needed for turn lanes |
| Description | R2. Local access undivided rural collector. Left and right turn provided where required for safety. Design speed determined by VDOT and DTCI. Improvements will be constructed in conformance with the Heritage Resource Policies of the CTP and the Scenic Areas and Corridor Policies of the Revised General Plan and the Heritage Preservation Plan. |
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. |

112. VA Route 704 - Harmony Church Road

| | |
|------------------------------------|--|
| Segment | US Route 15 (James Monroe Highway) west and north to VA Route 7 Business (East Colonial Highway) |
| Policy Areas | Rural, Hamilton JLMA, Town of Hamilton |
| Existing/Ultimate Condition | |
| Functional Class | Major Collector / Virginia Byway |
| Lanes/Right of Way | 2/Varies – Additional ROW may be needed for turn lanes. Ultimate ROW within Town of Hamilton determined by Town. |
| Description | R2. Local access undivided rural collector. In Rural Policy Area, left and right turn lanes provided where required for safety. In JLMA and Town, left and right turn lanes recommended at major intersections. Design speed varies. Any improvements will be constructed in conformance with the Heritage Resource Policies of the CTP and the Scenic Areas and Corridor Policies of the Revised General Plan and the Heritage Preservation Plan. |
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements; bicycle and pedestrian facilities within Town of Hamilton subject to Town review. |

113. VA Route 704 - Hamilton Station Road

| | |
|---------|---|
| Segment | VA Route 7 Business (East Colonial Highway) north and east to VA Route 662 (Clarkes Gap Road) |
|---------|---|

| | |
|--------------|----------------------|
| Policy Areas | Hamilton JLMA, Rural |
|--------------|----------------------|

Existing Condition

| | |
|------------------|-----------------|
| Functional Class | Major Collector |
|------------------|-----------------|

| | |
|--------------------|----------|
| Lanes/Right of Way | 2/Varies |
|--------------------|----------|

| | |
|-------------|--|
| Description | R2. Local access undivided rural collector. Grade-separated interchange at VA Route 7 Bypass. Design speed varies. |
|-------------|--|

Ultimate Condition

| | |
|------------------|-----------------|
| Functional Class | Major Collector |
|------------------|-----------------|

| | |
|--------------------|--|
| Lanes/Right of Way | 2/ROW subject to DTCI review – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities |
|--------------------|--|

| | |
|-------------|--|
| Description | R2. Local access undivided rural collector. Grade-separated interchange at VA Route 7 Bypass. In JLMA, left and right turn lanes recommended at major intersections. In Rural Policy Area, left and right turn lanes provided where required for safety. Design speed determined by VDOT and DTCI. |
|-------------|--|

| | |
|-------------------------------|---|
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. |
|-------------------------------|---|

114. VA Route 719 - Greengarden Road / Airmont Road

| | |
|---------|--|
| Segment | VA Route 743 (Millville Road) north to VA Route 734 (Snickersville Turnpike) |
|---------|--|

| | |
|-------------|-------|
| Policy Area | Rural |
|-------------|-------|

Existing Condition

| | |
|------------------|-----------------|
| Functional Class | Minor Collector |
|------------------|-----------------|

| | |
|--------------------|----------|
| Lanes/Right of Way | 2/Varies |
|--------------------|----------|

| | |
|-------------|---|
| Description | R2. Local access undivided rural collector. Design speed varies. Segments of roadway located within/adjacent to Beaverdam Creek Historic Roadways District. |
|-------------|---|

Ultimate Condition

| | |
|------------------|-----------------|
| Functional Class | Minor Collector |
|------------------|-----------------|

| | |
|--------------------|--|
| Lanes/Right of Way | 2/ROW subject to DTCI review – Additional ROW may be needed for turn lanes |
|--------------------|--|

| | |
|-------------|--|
| Description | R2. Local access undivided rural collector. Left and right turn lanes provided where required for safety. Design speed determined by VDOT and DTCI. Segments of roadway located within/adjacent to Beaverdam |
|-------------|--|

Creek Historic Roadways District. Improvements will be constructed in conformance with the Heritage Resource Policies of the CTP and the Scenic Areas and Corridor Policies of the Revised General Plan and the Heritage Preservation Plan.

Bicycle/Pedestrian Facilities Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.

115. VA Route 719 - Airmont Road / New Cut Road

Segment VA Route 734 (Snickersville Turnpike) north to VA Route 7 Business (Loudoun Street)

Policy Areas Rural, Town of Round Hill

Existing/Ultimate Condition

Functional Class Major Collector

Lanes/Right of Way 2/Varies – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities. Ultimate ROW width within Town of Round Hill determined by Town.

Description R2. Local access undivided rural collector. Passes under VA Route 7 Bypass. In Rural Policy Area, left and right turn lanes provided where required for safety. In Town, left and right turn lanes recommended at major intersections. Design speed varies.

Bicycle/Pedestrian Facilities Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements; bicycle and pedestrian facilities within Town of Round Hill subject to Town review.

116. VA Route 719 – Main Street / Woodgrove Road / Stony Point Road

Segment VA Route 7 Business (Loudoun Street) north to VA Route 9 (Charles Town Pike)

Policy Areas Town of Round Hill, Round Hill JLMA, Rural

Existing Condition

Functional Class Major Collector / Virginia Byway

Lanes/Right of Way 2/Varies

Description R2. Local access undivided rural collector. Design speed varies.

Ultimate Condition

Functional Class Major Collector / Virginia Byway

Lanes/Right of Way 2/ROW subject to DTCI review – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities. ROW width within Town of Round Hill determined by Town.

Description R2. Local access undivided rural collector. Roundabout at VA Route 9 (Charles Town Pike). In Town and JLMA, left right turn lanes recommended at major intersections. In Rural Policy Area, left and right

turn lanes provided where required for safety. Design speed determined by VDOT, Town of Round Hill and DTCL. Improvements will be constructed in conformance with the Heritage Resource Policies of the CTP and the Scenic Areas and Corridor Policies of the Revised General Plan and the Heritage Preservation Plan.

| | |
|-------------------------------|---|
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements; bicycle and pedestrian facilities within Town of Round Hill subject to Town review. |
|-------------------------------|---|

117. VA Route 733 - Lime Kiln Road

| | |
|---------|--|
| Segment | US Route 15 (James Monroe Highway) west to VA Route 734 (Snickersville Turnpike) |
|---------|--|

| | |
|-------------|-------|
| Policy Area | Rural |
|-------------|-------|

Existing/Ultimate Condition

| | |
|------------------|-----------------|
| Functional Class | Minor Collector |
|------------------|-----------------|

| | |
|--------------------|---|
| Lanes/Right of Way | 2/50 feet – Additional ROW may be needed for turn lanes |
|--------------------|---|

| | |
|-------------|--|
| Description | R2. Local access undivided rural collector. Left and right turn lanes provided where required for safety. Design speed varies. |
|-------------|--|

| | |
|-------------------------------|---|
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. |
|-------------------------------|---|

118. VA Route 734 - Snickersville Turnpike

| | |
|---------|---|
| Segment | US Route 50 (John Mosby Highway) northwest to VA Route 7 (Harry Byrd Highway) |
|---------|---|

| | |
|-------------|-------|
| Policy Area | Rural |
|-------------|-------|

Existing/Ultimate Condition

| | |
|------------------|----------------------------------|
| Functional Class | Major Collector / Virginia Byway |
|------------------|----------------------------------|

| | |
|--------------------|----------|
| Lanes/Right of Way | 2/Varies |
|--------------------|----------|

| | |
|-------------|--|
| Description | R2. Local access undivided rural collector. Left and right turn lanes provided where required for safety. Design speed determined by VDOT and DTCL. Segments of roadway located within/adjacent to Beaverdam Creek Historic Roadways District. Improvements will be constructed in conformance with the Heritage Resource Policies of the CTP and the Scenic Areas and Corridor Policies of the Revised General Plan and the Heritage Preservation Plan. |
|-------------|--|

| | |
|-------------------------------|---|
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. |
|-------------------------------|---|

119. VA Route 742 - Poland Road

| | |
|---------|--|
| Segment | VA Route 2201 (South Riding Boulevard) east and south to VA Route 2200 (Tall Cedars Parkway) |
|---------|--|

| | |
|-------------------------------|--|
| Policy Area | Suburban (Dulles) |
| Existing Condition | |
| Existing Segment | US Route 50 (John Mosby Highway) to VA Route 2200 (Tall Cedars Parkway) |
| Functional Class | Minor Collector |
| Lanes/Right of Way | 2-4/Varies |
| Description | R2/U4. Local access undivided rural and urban collector road. Design speed varies. |
| Ultimate Condition | |
| Functional Class | Minor Collector |
| Lanes/Right of Way | 4/70 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities |
| Description | U4. Local access undivided urban secondary road. VA Route 742 will be realigned to connect with Defender Drive; existing VA Route 742 (Poland Road)/US Route 50 (John Mosby Highway) intersection will be closed and access to US Route 50 terminated when US Route 50 becomes limited access. Left and right turn lanes required at major intersections. 40 mph design speed. |
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. |

120. VA Route 742 - Poland Road

| | |
|-------------------------------|--|
| Segment | VA Route 2200 (Tall Cedars Parkway) south and east to Fairfax County Line |
| Policy Area | Suburban (Dulles) |
| Existing Condition | |
| Functional Class | Minor Collector |
| Lanes/Right of Way | 2/Varies |
| Description | R2. Local access undivided rural secondary road. Design speed varies. |
| Ultimate Condition | |
| Functional Class | Minor Collector |
| Lanes/Right of Way | 2/70 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities |
| Description | R2. Local access undivided rural secondary road. Left and right turn lanes required at major intersections. 40 mph design speed. |
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. |

121. VA Route 743 - Millville Road

| | |
|---------|---|
| Segment | VA Route 623 (Willisville Road) west to VA Route 719 (Greengarden Road) |
|---------|---|

| | |
|-------------|-------|
| Policy Area | Rural |
|-------------|-------|

Existing Condition

| | |
|------------------|-----------------|
| Functional Class | Minor Collector |
|------------------|-----------------|

| | |
|--------------------|----------|
| Lanes/Right of Way | 2/Varies |
|--------------------|----------|

| | |
|-------------|---|
| Description | R2. Local access undivided rural collector. Design speed varies. Segments of roadway located within/adjacent to Beaverdam Creek Historic Roadways District. |
|-------------|---|

Ultimate Condition

| | |
|------------------|-----------------|
| Functional Class | Minor Collector |
|------------------|-----------------|

| | |
|--------------------|--|
| Lanes/Right of Way | 2/ROW subject to DTCI review – Additional ROW may be needed for turn lanes |
|--------------------|--|

| | |
|-------------|--|
| Description | R2. Local access undivided rural collector. Left and right turn lanes provided where required for safety. Design speed determined by VDOT and DTCI. Segments of roadway located within/adjacent to Beaverdam Creek Historic Roadways District. Improvements will be constructed in conformance with the Heritage Resource Policies of the CTP and the Scenic Areas and Corridor Policies of the Revised General Plan and the Heritage Preservation Plan. |
|-------------|--|

| | |
|-------------------------------|---|
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. |
|-------------------------------|---|

122. VA Route 772 - Ashburn Village Boulevard

| | |
|---------|--|
| Segment | VA Route 625 (Farmwell Road) south to VA Route 267 (Dulles Greenway) interchange |
|---------|--|

| | |
|-------------|--------------------|
| Policy Area | Suburban (Ashburn) |
|-------------|--------------------|

Existing Condition

| | |
|------------------|-----------------|
| Functional Class | Major Collector |
|------------------|-----------------|

| | |
|--------------------|--------------|
| Lanes/Right of Way | 2-4/120 feet |
|--------------------|--------------|

| | |
|-------------|--|
| Description | U2/U4M. Controlled access undivided and median divided urban collector. Grade-separated interchange at VA Route 267 (Dulles Greenway). Two-lane undivided (U2) section currently in place along portion of segment between VA Route 625 (Farmwell Road) and VA Route 640 (Waxpool Road); four-lane divided (U4M) section elsewhere. Design speed varies. |
|-------------|--|

Ultimate Condition

| | |
|------------------|-----------------|
| Functional Class | Major Collector |
|------------------|-----------------|

| | |
|-------------------------------|---|
| Lanes/Right of Way | 4/120 feet – Additional ROW may be needed for interchange(s), turn lanes and bicycle/pedestrian facilities |
| Description | U4M. Controlled access median divided urban collector. Grade-separated interchange at VA Route 267 (Dulles Greenway). Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 45 mph design speed. |
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. |

123. VA Route 772 - Ryan Road

| | |
|---------|--|
| Segment | VA Route 607 (Loudoun County Parkway) west to VA Route 659 Relocated (Northstar Boulevard) |
|---------|--|

| | |
|-------------|----------------------------|
| Policy Area | Suburban (Ashburn, Dulles) |
|-------------|----------------------------|

Existing Condition

| | |
|--------------------|---|
| Functional Class | Major Collector |
| Lanes/Right of Way | 4/120 feet |
| Description | R4M/U4M. Controlled access median divided rural and urban collector. 50 mph design speed. |

Interim Condition

| | |
|-------------------------------|--|
| Functional Class | Major Collector |
| Lanes/Right of Way | 4/120 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities |
| Description | U4M. Controlled access median divided urban collector. Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 50 mph design speed. |
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. |

Ultimate Condition

| | |
|-------------------------------|--|
| Functional Class | Major Collector |
| Lanes/Right of Way | 6/120 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities |
| Description | U6M. Controlled access median divided urban collector. Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 50 mph design speed. |
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. |

124. VA Route 772 - Ryan Road

| | |
|---------|--|
| Segment | VA Route 659 Relocated (Northstar Boulevard) west to VA Route 621 (Evergreen Mills Road) |
|---------|--|

| | |
|--------------|-------------------------------|
| Policy Areas | Suburban (Dulles), Transition |
|--------------|-------------------------------|

Existing Condition

| | |
|------------------|-----------------|
| Functional Class | Minor Collector |
|------------------|-----------------|

| | |
|--------------------|----------|
| Lanes/Right of Way | 2/Varies |
|--------------------|----------|

| | |
|-------------|---|
| Description | R2. Local access undivided rural collector road. Design speed varies. |
|-------------|---|

Ultimate Condition

| | |
|------------------|-----------------|
| Functional Class | Minor Collector |
|------------------|-----------------|

| | |
|--------------------|---|
| Lanes/Right of Way | 4/90 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities |
|--------------------|---|

| | |
|-------------|---|
| Description | R4. Local access undivided rural collector. Left and right turn lanes required at major intersections. 40 mph design speed. |
|-------------|---|

| | |
|-------------------------------|---|
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. |
|-------------------------------|---|

125. VA Route 773 - Edwards Ferry Road

| | |
|---------|---|
| Segment | US Route 15 (Leesburg Bypass) east to Battlefield Parkway |
|---------|---|

| | |
|-------------|------------------|
| Policy Area | Town of Leesburg |
|-------------|------------------|

Existing Condition

| | |
|------------------|-----------------|
| Functional Class | Minor Collector |
|------------------|-----------------|

| | |
|--------------------|----------|
| Lanes/Right of Way | 4/Varies |
|--------------------|----------|

| | |
|-------------|--|
| Description | U4/U4M. Local access undivided and divided urban collector. Design speed varies. |
|-------------|--|

Ultimate Condition

| | |
|------------------|-----------------|
| Functional Class | Minor Collector |
|------------------|-----------------|

| | |
|--------------------|--|
| Lanes/Right of Way | 4/ROW determined by Town of Leesburg – Additional ROW may be needed for interchange(s), turn lanes and bicycle/pedestrian facilities |
|--------------------|--|

| | |
|-------------|--|
| Description | U4/U4M. Local access median divided urban collector. Grade-separated interchange at US Route 15 (Leesburg Bypass). Left and right turn lanes required at all intersections. Median crossover spacing and design speed determined by VDOT and Town of Leesburg. |
|-------------|--|

| | |
|-------------------------------|---|
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements; bicycle and pedestrian facilities subject to Town review. |
|-------------------------------|---|

126. VA Route 773 - Edwards Ferry Road

| | |
|--------------|--|
| Segment | Battlefield Parkway east to VA Route 773 (River Creek Parkway) |
| Policy Areas | Town of Leesburg, Leesburg JLMA |

Existing Condition

| | |
|--------------------|--|
| Functional Class | Minor Collector |
| Lanes/Right of Way | 2/Varies |
| Description | R2. Local access undivided rural collector. Design speed varies. |

Ultimate Condition

| | |
|-------------------------------|--|
| Functional Class | Minor Collector |
| Lanes/Right of Way | 2/ROW subject to DTCI and Town review – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities |
| Description | R2. Local access undivided rural collector. Road will be studied for alternate typical sections in consultation with the Town of Leesburg and VDOT and with consideration of historic and scenic resources. Traffic calming measures should be considered for this road segment. |
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. |

127. VA Route 773 - River Creek Parkway

| | |
|-------------|--|
| Segment | VA Route 773 (Edwards Ferry Road) south to Fort Evans Road/VA Route 2401 (Riverside Parkway) |
| Policy Area | Leesburg JLMA |

Existing/Ultimate Condition

| | |
|-------------------------------|---|
| Functional Class | Minor Collector |
| Lanes/Right of Way | 4/70 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities |
| Description | U4. Local access undivided urban collector. Left and right turn lanes required at major intersections. 45 mph design speed. |
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. |

128. VA Route 773 - River Creek Parkway

| | |
|--------------|---|
| Segment | Fort Evans Road/VA Route 2401 (Riverside Parkway) south to VA Route 7 (East Market Street) interchange (opposite VA Route 653 Relocated (Crosstrail Boulevard)) |
| Policy Areas | Leesburg JLMA, Town of Leesburg |

Existing/Interim Condition

| | |
|-------------------------------|--|
| Functional Class | Minor Collector |
| Lanes/Right of Way | 4/120 feet – Additional ROW may be needed for interchange(s), turn lanes and bicycle/pedestrian facilities |
| Description | U4M. Controlled access median divided urban collector. Grade-separated interchange at VA Route 7 (East Market Street). Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 45 mph design speed. |
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements; bicycle and pedestrian facilities within Town of Leesburg subject to Town review. |

Ultimate Condition

| | |
|-------------------------------|--|
| Functional Class | Minor Collector |
| Lanes/Right of Way | 6/120 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities. ROW width within Town of Leesburg determined by Town. |
| Description | U6M. Controlled access median divided urban collector. Grade-separated interchange at VA Route 7 (East Market Street). Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 45 mph design speed. |
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements; bicycle and pedestrian facilities within Town of Leesburg subject to Town review. |

129. VA Route 774 - Creighton Road

| | |
|-------------|--|
| Segment | VA Route 659 Relocated (Northstar Boulevard) east to VA Route 607 (Loudoun County Parkway) |
| Policy Area | Suburban (Dulles) |

Existing/Ultimate Condition

| | |
|-------------------------------|--|
| Functional Class | Minor Collector |
| Lanes/Right of Way | 4/70 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities |
| Description | U4. Local access undivided urban collector. Left and right turn lanes recommended at major intersections. 40 mph design speed. |
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. |

130. VA Route 775 - Relocation Drive

| | |
|---------|---|
| Segment | VA Route 606 (Old Ox Road) northeast to VA Route 1036 (Pacific Boulevard) |
|---------|---|

| | |
|-------------------------------|--|
| Policy Area | Suburban (Sterling) |
| Existing Condition | |
| Functional Class | Minor Collector |
| Lanes/Right of Way | 2/70 feet |
| Description | R2. Local access undivided rural secondary road. Design speed varies. |
| Ultimate Condition | |
| Functional Class | Major Collector |
| Lanes/Right of Way | 4/110 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities |
| Description | U4M. Controlled access median divided urban collector. Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 40 mph design speed. |
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. |

131. VA Route 789 - Lockridge Road

| | |
|-------------------------------|---|
| Segment | VA Route 1071 (Prentice Drive) to VA Route 643 (Shellhorn Road) |
| Policy Area | Suburban (Sterling) |
| Existing Condition | |
| Existing Segment | VA Route 1071 (Prentice Drive) to Future VA Route 643 (Shellhorn Road) |
| Functional Class | Minor Collector |
| Lanes/Right of Way | 2/Varies |
| Description | R2. |
| Ultimate Condition | |
| Functional Class | Major Collector |
| Lanes/Right of Way | 4/110 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities |
| Description | U4M. Refer to VDOT Road Design Manual for median crossover spacing requirements. Left turn lanes and right turn lanes required at all intersections. 35 mph design speed. |
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. |

132. VA Route 789 Extended – Lockridge Road West

Segment VA Route 1071 Extended/Route 789 Extended (Prentice Drive) north to VA Route 640 (Waxpool Road)

Policy Area Suburban (Ashburn)

Ultimate Condition

Functional Class Major Collector

Lanes/Right of Way 4/90 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities

Description U4M. Controlled access median divided urban collector. Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 40 mph design speed.

Bicycle/Pedestrian Facilities Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.

133. VA Route 846 Extended - Sterling Boulevard

Segment VA Route 643 (Shellhorn Road) at VA Route 1072 (Randolph Drive) to VA Route 28 (Sully Road)

Policy Area Suburban (Sterling)

Existing/Ultimate Condition

Existing Segment VA Route 1036 (Pacific Boulevard) east to VA Route 28 (Sully Road) interchange

Functional Class Major Collector

Lanes/Right of Way 4/120 feet – Additional ROW may be needed for turn lanes

Description U4M. Controlled access median divided urban collector. Grade-separated interchange at VA Route 28 (Sully Road). Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 40 mph design speed.

Bicycle/Pedestrian Facilities Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.

134. VA Route 846 - Sterling Boulevard

Segment VA Route 28 (Sully Road) interchange northeast to VA Route 868 (Davis Drive)

Policy Area Suburban (Sterling)

Existing Condition

Functional Class Minor Arterial

Lanes/Right of Way 4/110 feet

| | |
|-------------|---|
| Description | U4M. Controlled access median divided urban arterial. Median crossover spacing varies. 40 mph design speed. |
|-------------|---|

Ultimate Condition

| | |
|-------------------------------|--|
| Functional Class | Minor Arterial |
| Lanes/Right of Way | 6/120 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities |
| Description | U6M. Controlled access median divided urban arterial. Median crossovers will not increase from Existing Condition. Left and right turn lanes required at all intersections. 40 mph design speed. |
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. |

135. VA Route 846 - Sterling Boulevard

| | |
|-------------|---|
| Segment | VA Route 868 (Davis Drive) northeast to VA Route 7 (Harry Byrd Highway) |
| Policy Area | Suburban (Sterling) |

Existing Condition

| | |
|--------------------|--|
| Functional Class | Minor Arterial |
| Lanes/Right of Way | 4/Varies |
| Description | U4M. Controlled access median divided urban arterial. Local service roads east and west of main roadway in some locations. Median crossover spacing varies. 40 mph design speed. |

Ultimate Condition

| | |
|-------------------------------|---|
| Functional Class | Minor Arterial |
| Lanes/Right of Way | 4/ROW subject to DTCI review – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities |
| Description | U4M. Controlled access median divided urban arterial. Local service roads east and west of main roadway in some locations. Median crossovers will not increase from Existing Condition. Left and right turn lanes required at all intersections. 40 mph design speed. |
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. |

136. VA Route 864 - Glenn Drive

| | |
|-------------|---|
| Segment | VA Route 846 (Sterling Boulevard) north to VA Route 634 Extended (Moran Road) |
| Policy Area | Suburban (Sterling) |

Existing Condition

| | |
|--------------------|--|
| Existing Segment | VA Route 846 (Sterling Boulevard) north to approximately 400 feet north of First Potomac Drive |
| Functional Class | Local/Secondary Road |
| Lanes/Right of Way | 4/70 feet |
| Description | U4. Local access undivided urban secondary road. Design speed varies. |

Ultimate Condition

| | |
|-------------------------------|--|
| Functional Class | Minor Collector |
| Lanes/Right of Way | 4/70 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities |
| Description | U4. Local access undivided urban collector road. Road extended from current northern terminus to Route 634 Extended (Moran Road). Left and right turn lanes recommended at major intersections. 40 mph design speed. |
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. |

137. VA Route 868 - Davis Drive (VA Route 28 East Collector Road)

| | |
|-------------|---|
| Segment | Fairfax County line at the future bridge over VA Route 267 (Dulles Toll Road) north to VA Route 625 (Church Road) |
| Policy Area | Suburban (Sterling) |

Existing/Ultimate Condition

| | |
|-------------------------------|---|
| Existing Segment | Yeager Court (approximately 3,300 feet south of VA Route 846 (Sterling Boulevard)) north to VA Route 625 (Church Road) |
| Functional Class | Major Collector |
| Lanes/Right of Way | 4/70 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities |
| Description | U4. Local access undivided urban collector. Left and right turn lanes required at major intersections. 40 mph design speed. Refer to Note G on the CTP Map for additional information regarding this roadway. |
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. |

138. VA Route 901 - Claiborne Parkway

| | |
|-------------|---|
| Segment | VA Route 7 (Harry Byrd Highway) interchange (opposite VA Route 2400 (Lansdowne Boulevard)) south to VA Route 607 (Loudoun County Parkway) |
| Policy Area | Suburban (Ashburn, Dulles) |

Existing/ Ultimate Condition

| | |
|-------------------------------|---|
| Existing Segments | VA Route 7 (Harry Byrd Highway) interchange to VA Route 645 (Croson Lane); VA Route 772 (Ryan Road) to VA Route 607 (Loudoun County Parkway) |
| Functional Class | Major Collector |
| Lanes/Right of Way | 4/120 feet – Additional ROW may be needed for interchange(s), turn lanes and bicycle/pedestrian facilities |
| Description | U4M. Controlled access median divided urban collector. Grade-separated interchanges at VA Route 7 (Harry Byrd Highway) and at VA Route 267 (Dulles Greenway). Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 50 mph design speed. |
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. |

139. VA Route 1036 - Pacific Boulevard (VA Route 28 West Collector Road)

| | |
|-------------|---|
| Segment | VA Route 28 (Sully Road) at VA Route 209 (Innovation Avenue) interchange west and north to VA Route 606 (Old Ox Road) |
| Policy Area | Suburban (Sterling) |

Ultimate Condition

| | |
|-------------------------------|--|
| Functional Class | Major Collector |
| Lanes/Right of Way | 6/120 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities |
| Description | U6M. Controlled access median divided urban collector. Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 40 mph design speed. |
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. |

140. VA Route 1036 - Pacific Boulevard (VA Route 28 West Collector Road)

| | |
|-------------|---|
| Segment | VA Route 606 (Old Ox Road) north to VA Route 625 (Waxpool Road) |
| Policy Area | Suburban (Sterling) |

Existing/Ultimate Condition

| | |
|--------------------|--|
| Functional Class | Major Collector |
| Lanes/Right of Way | 4/110 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities |
| Description | U4M. Controlled access median divided urban collector. Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 40 mph design speed. |

| | |
|-------------------------------|---|
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. |
|-------------------------------|---|

141. VA Route 1036 - Pacific Boulevard (VA Route 28 West Collector Road)

| | |
|---------|---|
| Segment | VA Route 625 (Waxpool Road) north to VA Route 1748 (Severn Way) |
|---------|---|

| | |
|-------------|---------------------|
| Policy Area | Suburban (Sterling) |
|-------------|---------------------|

Existing/Ultimate Condition

| | |
|------------------|-----------------|
| Functional Class | Major Collector |
|------------------|-----------------|

| | |
|--------------------|--|
| Lanes/Right of Way | 4/120 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities |
|--------------------|--|

| | |
|-------------|--|
| Description | U4M. Controlled access median divided urban collector. Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 40 mph design speed. |
|-------------|--|

| | |
|-------------------------------|---|
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. |
|-------------------------------|---|

142. VA Route 1036 - Pacific Boulevard (VA Route 28 West Collector Road)

| | |
|---------|--|
| Segment | VA Route 1748 (Severn Way) north to VA Route 2150 (Gloucester Parkway) |
|---------|--|

| | |
|-------------|---------------------|
| Policy Area | Suburban (Sterling) |
|-------------|---------------------|

Existing Condition

| | |
|------------------|-----------------|
| Functional Class | Major Collector |
|------------------|-----------------|

| | |
|--------------------|-------------|
| Lanes/Right of Way | 2-4/70 feet |
|--------------------|-------------|

| | |
|-------------|--|
| Description | U2/U4. Local access undivided urban collector. Currently four-lane (U4) section from VA Route 1748 (Severn Way) to a point approximately 700 feet north; two-lane (U2) section elsewhere. Design speed varies. |
|-------------|--|

Ultimate Condition

| | |
|------------------|-----------------|
| Functional Class | Major Collector |
|------------------|-----------------|

| | |
|--------------------|---|
| Lanes/Right of Way | 4/70 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities |
|--------------------|---|

| | |
|-------------|---|
| Description | U4. Local access undivided urban collector. Left and right turn lanes required at major intersections. 40 mph design speed. |
|-------------|---|

| | |
|-------------------------------|---|
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. |
|-------------------------------|---|

143. VA Route 1036 - Pacific Boulevard (VA Route 28 West Collector Road)

| | |
|---------|---|
| Segment | VA Route 2150 (Gloucester Parkway) north to Broad Run |
|---------|---|

Policy Area Suburban (Sterling)

Ultimate Condition

Functional Class Major Collector

Lanes/Right of Way 4/90 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities

Description U4M. Controlled access median divided urban collector. Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 40 mph design speed.

Bicycle/Pedestrian Facilities Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.

144. VA Route 1036 - Pacific Boulevard (VA Route 28 West Collector Road)

Segment Broad Run west to VA Route 1061 (Russell Branch Parkway)

Policy Area Suburban (Ashburn)

Ultimate Condition

Functional Class Major Collector

Lanes/Right of Way 4/70 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities

Description U4. Local access undivided urban collector. Left and right turn lanes required at major intersections. 40 mph design speed.

Bicycle/Pedestrian Facilities Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.

145. VA Route 1050 - George Washington Boulevard

Segment VA Route 1061 (Russell Branch Parkway) north and west to VA Route 1052 (Riverside Parkway) in University Center

Policy Area Suburban (Ashburn)

Existing Condition

Existing Segment Research Place to Riverside Parkway

Functional Class Minor Collector

Lanes/Right of Way 4/70 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities

Description U4. Local access undivided urban collector. Left and right turn lanes required at all intersections. 40 mph design speed.

Ultimate Condition

Functional Class Minor Collector

| | |
|-------------------------------|---|
| Lanes/Right of Way | 4/70 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities |
| Description | U4. Local access undivided urban collector. Bridge over VA Route 7 (Harry Byrd Highway) between the VA Route 28 and the Loudoun County Parkway (VA Route 607) interchanges. Left and right turn lanes required at all intersections. 40 mph design speed. |
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. |

146. VA Route 1050 - George Washington Boulevard

| | |
|-------------|--|
| Segment | VA Route 1052 (Riverside Parkway) west to VA Route 607 (Loudoun County Parkway) in University Center |
| Policy Area | Suburban (Ashburn) |

Existing/Ultimate Condition

| | |
|-------------------------------|--|
| Functional Class | Major Collector |
| Lanes/Right of Way | 6/120 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities |
| Description | U6M. Controlled access median divided urban collector. Traffic calming to be considered along this segment of roadway. Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 40 mph design speed. |
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. |

147. VA Route 1061 - Russell Branch Parkway (VA Route 7 South Collector Road)

| | |
|-------------|--|
| Segment | VA Route 1036 (Pacific Boulevard) west to VA Route 901 (Claiborne Parkway) |
| Policy Area | Suburban (Ashburn) |

Existing/Interim Condition

| | |
|--------------------|--|
| Existing Segments | Approximately 700 feet east of VA Route 1060 (Richfield Way / Waverly Court) to VA Route 2020 (Ashburn Village Boulevard); VA Route 641 (Ashburn Road) to VA Route 901 (Claiborne Parkway) |
| Functional Class | Major Collector |
| Lanes/Right of Way | 4/120 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities |
| Description | U4M. Controlled access median divided urban collector. Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 40 mph design speed. |

| | |
|-------------------------------|--|
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. |
| Ultimate Condition | |
| Functional Class | Major Collector |
| Lanes/Right of Way | 6/120 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities |
| Description | U6M. Controlled access median divided urban collector. Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 40 mph design speed. |
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. |

148. VA Route 1061 - Russell Branch Parkway (VA Route 7 South Collector Road)

| | |
|-------------|--|
| Segment | VA Route 901 (Claiborne Parkway) west over Goose Creek to VA Route 653 (Cochran Mill Road) |
| Policy Area | Suburban (Ashburn), Leesburg JLMA |

Existing/Ultimate Condition

| | |
|-------------------------------|--|
| Existing Segment | VA Route 901 (Claiborne Parkway) to 2,000 feet west of Tournament Parkway |
| Functional Class | Major Collector |
| Lanes/Right of Way | 4/120 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities |
| Description | U4M. Controlled access median divided urban collector. Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 40 mph design speed. |
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. |

149. VA Route 1071 – Prentice Drive

| | |
|-------------|---|
| Segment | VA Route 1036 (Pacific Boulevard) west to VA Route 789 (Lockridge Road) |
| Policy Area | Suburban (Sterling) |

Existing/Ultimate Condition

| | |
|--------------------|---|
| Existing Segment | VA Route 1036 (Pacific Boulevard) west to VA Route 789 (Lockridge Road) |
| Functional Class | Major Collector |
| Lanes/Right of Way | 4/Varies |

| | |
|-------------------------------|---|
| Description | U4. Local access undivided urban collector. Left and right turn lanes required at all intersections. 40 mph design speed. |
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. |

150. VA Route 1071 Extended/VA Route 789 Extended – Prentice Drive

| | |
|-------------|--|
| Segment | VA Route 789 (Lockridge Road) to VA Route 789 Extended (Lockridge Road West) |
| Policy Area | Suburban (Ashburn, Sterling) |

Ultimate Condition

| | |
|-------------------------------|--|
| Functional Class | Major Collector |
| Lanes/Right of Way | 4/90 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities |
| Description | U4M. Controlled access median divided urban collector. Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 40 mph design speed. |
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. |

151. VA Route 1071 Extended – Prentice Drive

| | |
|-------------|--|
| Segment | VA Route 789 Extended (Lockridge Road West) southwest to Greenway Transit Connector (Metro Center Drive) |
| Policy Area | Suburban (Ashburn) |

Ultimate Condition

| | |
|-------------------------------|--|
| Functional Class | Major Collector |
| Lanes/Right of Way | 4/90 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities |
| Description | U4M. Controlled access median divided urban collector. Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 40 mph design speed. |
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. |

152. VA Route 1072 – Randolph Drive

Segment VA Route 1071 (Prentice Drive) to approximately 2,500 feet south of Prentice Drive

Policy Area Suburban (Sterling)

Existing Condition

Functional Class Local Secondary Road

Lanes/Right of Way 4/70 feet

Description U4. Local access undivided local secondary road. 40 mph design speed.

Ultimate Condition

Functional Class Major Collector

Lanes/Right of Way 4/70 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities

Description U4. Controlled access undivided urban collector. Left and right turn lanes required at all intersections. 40 mph design speed.

Bicycle/Pedestrian Facilities Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.

153. VA Route 1072 – Randolph Drive

Segment Approximately 2,500 feet south of VA Route 1071 (Prentice Drive) to VA Route 606 (Old Ox Road)

Policy Area Suburban (Sterling)

Ultimate Condition

Functional Class Major Collector

Lanes/Right of Way 4/90 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities

Description U4M. Controlled access median divided urban collector. Left and right turn lanes required at all intersections. 40 mph design speed. Existing segment of VA Route 634 (Moran Road) near VA Route 606 (Old Ox Road) to be incorporated into the realigned segment of the roadway.

Bicycle/Pedestrian Facilities Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.

154. VA Route 1320 - Evening Star Drive (Round Hill North Collector Road)

Segment VA Route 7 Business (East Loudoun Street) north and west to VA Route 719 (Woodgrove Road)

| | |
|-------------------------------|---|
| Policy Area | Town of Round Hill, Round Hill JLMA |
| Existing Condition | |
| Functional Class | Minor Collector |
| Lanes/Right of Way | 2/90 feet |
| Description | U2. Local access undivided urban collector. Design speed varies. |
| Ultimate Condition | |
| Functional Class | Minor Collector |
| Lanes/Right of Way | 4/90 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities |
| Description | U4M. Controlled access median divided urban collector. Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 45 mph design speed. |
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements; bicycle and pedestrian facilities within Town of Round Hill subject to Town review. |

155. VA Route 1320 - Evening Star Drive (Round Hill North Collector Road)

| | |
|------------------------------------|--|
| Segment | VA Route 719 (Woodgrove Road) west and south to VA Route 7 (Harry Byrd Highway) just west of VA Route 7 Business (West Loudoun Street) intersection |
| Policy Area | Round Hill JLMA, Rural |
| Existing/Ultimate Condition | |
| Existing Segment | VA Route 719 (Woodgrove Road) to VA Route 1319 (Lee Drive); from approximately 500 feet north to approximately 1,000 feet south of VA Route 1311 (Pickett Road) |
| Functional Class | Minor Collector |
| Lanes/Right of Way | 2/50 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities |
| Description | R2. Local access undivided rural collector. Grade-separated interchange at VA Route 7 Bypass (Harry Byrd Highway)/VA Route 1320 (Evening Star Drive) (west of Round Hill). Location of the western Round Hill interchange to be determined by further study and in consultation with the Town of Round Hill. In JLMA, left and right turn lanes recommended at major intersections. In Rural Policy Area, left and right turn lanes provided where required for safety. Design speed varies. |
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. |

156. VA Route 1570 - Countryside Boulevard

Segment VA Route 7 (Harry Byrd Highway) north and west to VA Route 1582 (Algonkian Parkway)

Policy Area Suburban (Potomac)

Existing/Ultimate Condition

Functional Class Major Collector

Lanes/Right of Way 4/120 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities

Description R4M. Controlled access median divided rural collector. Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 40 mph design speed.

Bicycle/Pedestrian Facilities Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.

157. VA Route 1582 - Algonkian Parkway

Segment VA Route 7 (Harry Byrd Highway) interchange (opposite VA Route 1902 (Atlantic Boulevard)) north and east to VA Route 1825 (Cedarhurst Drive) (opposite Potomac Falls High School entrance)

Policy Area Suburban (Potomac)

Existing/Ultimate Condition

Functional Class Minor Arterial

Lanes/Right of Way 4/120 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities

Description R4M. Controlled access median divided rural arterial. Grade-separated interchange at VA Route 7 (Harry Byrd Highway). Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 50 mph design speed.

Bicycle/Pedestrian Facilities Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.

158. VA Route 1582 - Algonkian Parkway

Segment VA Route 1825 (Cedarhurst Drive) (opposite Potomac Falls High School entrance) east and south to Fairfax County Line

Policy Area Suburban (Potomac)

Existing/Ultimate Condition

Functional Class Minor Arterial

Lanes/Right of Way 4/120 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities

| | |
|-------------------------------|---|
| Description | U4M. Controlled access median divided urban arterial. Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 50 mph design speed. |
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. |

159. VA Route 1793 - Nokes Boulevard

| | |
|-------------|--|
| Segment | VA Routes 637/1794 (Cascades Parkway) (opposite VA Route 637 (Potomac View Road)) west to VA Route 1902 (Atlantic Boulevard) |
| Policy Area | Suburban (Sterling) |

Existing/Ultimate Condition

| | |
|-------------------------------|--|
| Functional Class | Major Collector |
| Lanes/Right of Way | 4/110 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities |
| Description | U4M. Controlled access median divided urban collector. Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 45 mph design speed. |
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. |

160. VA Route 1793 - Nokes Boulevard

| | |
|-------------|---|
| Segment | VA Route 1902 (Atlantic Boulevard) west to VA Route 28 (Sully Road) interchange |
| Policy Area | Suburban (Sterling) |

Existing/Interim Condition

| | |
|-------------------------------|---|
| Functional Class | Major Collector |
| Lanes/Right of Way | 4/120 feet – Additional ROW may be needed for turn lanes and interchange(s) |
| Description | U4M. Controlled access median divided urban collector. Grade-separated interchange at VA Route 28 (Sully Road). Left and right turn lanes required at all intersections. 45 mph design speed. |
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. |

Ultimate Condition

| | |
|--------------------|--|
| Functional Class | Major Collector |
| Lanes/Right of Way | 6/120 feet – Additional ROW may be needed for interchange(s) |

| | |
|-------------------------------|--|
| Description | U6M. Limited access median divided urban collector. Grade-separated interchange at VA Route 28 (Sully Road). Left and right turn lanes required at all intersections. 45 mph design speed. |
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. |

161. VA Route 1794 - Cascades Parkway

| | |
|---------|--|
| Segment | VA Route 637 (Potomac View Road) at VA Route 1793 (Nokes Boulevard) north to VA Route 1582 (Algonkian Parkway) |
|---------|--|

| | |
|-------------|------------------------------|
| Policy Area | Suburban (Sterling, Potomac) |
|-------------|------------------------------|

Existing/Ultimate Condition

| | |
|-------------------------------|--|
| Functional Class | Major Collector |
| Lanes/Right of Way | 4/120 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities |
| Description | U4M. Controlled access median divided urban collector. Grade-separated interchange at VA Route 7 (Harry Byrd Highway). Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 50 mph design speed. |
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. |

162. VA Route 1795 - Palisade Parkway

| | |
|---------|--|
| Segment | VA Route 7 (Harry Byrd Highway) north and east to VA Route 637 (Potomac View Road) |
|---------|--|

| | |
|-------------|--------------------|
| Policy Area | Suburban (Potomac) |
|-------------|--------------------|

Existing/Ultimate Condition

| | |
|-------------------------------|--|
| Functional Class | Minor Collector |
| Lanes/Right of Way | 4/120 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities |
| Description | U4M. Controlled access median divided urban collector. Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 50 mph design speed. |
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. |

163. VA Route 1902 - Atlantic Boulevard (VA Route 28 East Collector Road)

| | |
|---------|--|
| Segment | VA Route 625 (Church Road) north to VA Route 7 (Harry Byrd Highway) interchange (opposite VA Route 1582 (Algonkian Parkway)) |
|---------|--|

| | |
|-------------|---------------------|
| Policy Area | Suburban (Sterling) |
|-------------|---------------------|

Existing/Ultimate Condition

| | |
|-------------------------------|--|
| Functional Class | Major Collector |
| Lanes/Right of Way | 4/90 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities |
| Description | U4M. Controlled access median divided urban collector. Grade-separated interchange at VA Route 7 (Harry Byrd Highway). Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 40 mph design speed. |
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. |

164. VA Route 1949 - City Center Boulevard

| | |
|-------------|---|
| Segment | VA Route 1793 (Nokes Boulevard) north to VA Route 7 (Harry Byrd Highway) (opposite VA Route 1570 (Countryside Boulevard)) |
| Policy Area | Suburban (Sterling) |

Existing/Ultimate Condition

| | |
|-------------------------------|--|
| Functional Class | Major Collector |
| Lanes/Right of Way | 4/120 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities |
| Description | U4M. Controlled access median divided urban collector. Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 40 mph design speed. |
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. |

165. VA Route 1950 - Smith Switch Road

| | |
|-------------|--|
| Segment | VA Route 625 (Waxpool Road/Farmwell Road) north and east to VA Route 2150 (Gloucester Parkway) |
| Policy Area | Suburban (Ashburn) |

Existing Condition

| | |
|--------------------|---|
| Functional Class | Local/Secondary Road |
| Lanes/Right of Way | 2-4/Varies |
| Description | R2/U2/U4. Local access undivided rural and urban secondary road. Four-lane (U4) section between Route 625 (Waxpool Road/Farmwell Road) and Hastings Drive. Design speed varies. |

Ultimate Condition

| | |
|------------------|-----------------|
| Functional Class | Minor Collector |
|------------------|-----------------|

| | |
|-------------------------------|---|
| Lanes/Right of Way | 4/70 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities |
| Description | U4. Local access undivided urban collector. Left and right turn lanes required at major intersections. 40 mph design speed. |
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. |

166. VA Route 2020 Extended – Ashburn Village Boulevard

| | |
|-------------|--|
| Segment | VA Route 2401 (Riverside Parkway) south to VA Route 7 (Harry Byrd Highway) |
| Policy Area | Suburban (Ashburn) |

Existing/Interim Condition

| | |
|-------------------------------|--|
| Functional Class | Major Collector |
| Lanes/Right of Way | 4/120 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities |
| Description | U4M. Controlled access median divided urban collector. Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 45 mph design speed. |
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. |

Ultimate Condition

| | |
|-------------------------------|--|
| Functional Class | Major Collector |
| Lanes/Right of Way | 6/120 feet – Additional ROW may be needed for interchange(s), turn lanes and bicycle/pedestrian facilities |
| Description | U6M. Controlled access median divided urban collector. Grade-separated interchange at VA Route 7 (Harry Byrd Highway). Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 45 mph design speed. |
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. |

167. VA Route 2020 - Ashburn Village Boulevard

| | |
|-------------|---|
| Segment | VA Route 7 (Harry Byrd Highway) south to VA Route 625 (Farmwell Road) |
| Policy Area | Suburban (Ashburn) |

Existing/Interim Condition

| | |
|------------------|-----------------|
| Functional Class | Major Collector |
|------------------|-----------------|

| | |
|-------------------------------|--|
| Lanes/Right of Way | 4/120 feet – Additional ROW may be needed for interchange(s), turn lanes and bicycle/pedestrian facilities |
| Description | R4M. Controlled access median divided rural collector. Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 45 mph design speed. |
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. |
| Ultimate Condition | |
| Functional Class | Major Collector |
| Lanes/Right of Way | 4/120 feet – Additional ROW may be needed for interchange(s), turn lanes and bicycle/pedestrian facilities |
| Description | U4M. Controlled access median divided urban collector. Grade-separated interchange at VA Route 7 (Harry Byrd Highway). Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 45 mph design speed. |
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. |

168. VA Route 2119 - Waxpool Road

| | |
|-------------------------------|--|
| Segment | Faulkner Parkway (Ryan Bypass) west to just west of bridge over VA Route 267 (Dulles Greenway) |
| Policy Area | Suburban (Ashburn) |
| Existing Condition | |
| Functional Class | Minor Collector |
| Lanes/Right of Way | 2-4/Varies |
| Description | R2/U4. Local access undivided rural and urban collector. Four-lane (U4) section west of VA Route 641 (Ashburn Road); two-lane (R2) section elsewhere. Design speed varies. |
| Ultimate Condition | |
| Functional Class | Minor Collector |
| Lanes/Right of Way | 4/70 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities |
| Description | U4. Local access undivided urban collector. Left and right turn lanes required at major intersections. 40 mph design speed. |
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. |

169. VA Route 2119 - Waxpool Road

Segment Just west of bridge over VA Route 267 (Dulles Greenway) west to VA Route 901 (Claiborne Parkway)

Policy Area Suburban (Ashburn)

Existing/Ultimate Condition

Functional Class Minor Collector

Lanes/Right of Way 4/90 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities

Description U4M. Local access undivided urban collector. Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at major intersections. 40 mph design speed.

Bicycle/Pedestrian Facilities Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.

170. VA Route 2119 - Waxpool Road / Truro Parish Drive

Segment VA Route 901 (Claiborne Parkway) west to VA Route 659 (Belmont Ridge Road)

Policy Area Suburban (Ashburn)

Existing/Ultimate Condition

Functional Class Major Collector

Lanes/Right of Way 4/90 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities

Description U4M. Controlled access median divided urban collector. Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 40 mph design speed.

Bicycle/Pedestrian Facilities Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.

171. VA Route 2150 - Gloucester Parkway

Segment VA Route 28 (Sully Road) interchange west to VA Route 607 (Loudoun County Parkway)

Policy Area Suburban (Sterling, Ashburn)

Existing/Interim Condition

Existing Segment VA Route 28 (Sully Road) interchange to VA Route 1036 (Pacific Boulevard)

Functional Class Major Collector

Lanes/Right of Way 4/120 feet – Additional ROW may be needed for turn lanes and interchange(s)

| | |
|-------------|---|
| Description | U4M. Controlled access median divided urban collector. Grade-separated interchange at VA Route 28 (Sully Road). Left and right turn lanes required at all intersections. 45 mph design speed. |
|-------------|---|

| | |
|-------------------------------|---|
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. |
|-------------------------------|---|

Ultimate Condition

| | |
|------------------|-----------------|
| Functional Class | Major Collector |
|------------------|-----------------|

| | |
|--------------------|---|
| Lanes/Right of Way | 6/120 feet – Additional ROW may be needed for turn lanes and interchange(s) |
|--------------------|---|

| | |
|-------------|--|
| Description | U6M. Limited access median divided urban collector. Grade-separated interchange at VA Route 28 (Sully Road). Left and right turn lanes required at all intersections. 45 mph design speed. |
|-------------|--|

| | |
|-------------------------------|---|
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. |
|-------------------------------|---|

172. VA Route 2150 - Gloucester Parkway

| | |
|---------|--|
| Segment | VA Route 607 (Loudoun County Parkway) west to VA Route 659 (Belmont Ridge Road) (opposite Trailview Boulevard) |
|---------|--|

| | |
|-------------|------------------------------|
| Policy Area | Suburban (Sterling, Ashburn) |
|-------------|------------------------------|

Existing/Ultimate Condition

| | |
|------------------|-----------------|
| Functional Class | Major Collector |
|------------------|-----------------|

| | |
|--------------------|--|
| Lanes/Right of Way | 4/120 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities |
|--------------------|--|

| | |
|-------------|--|
| Description | U4M. Controlled access median divided urban collector. Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 45 mph design speed. |
|-------------|--|

| | |
|-------------------------------|---|
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. |
|-------------------------------|---|

173. VA Route 2200 - Tall Cedars Parkway (US Route 50 South Collector Road)

| | |
|---------|--|
| Segment | US Route 50 (John Mosby Highway) (opposite VA Route 639 Relocated (Willard Road)) south and west to VA Route 659 Relocated (Northstar Boulevard) |
|---------|--|

| | |
|-------------|-------------------|
| Policy Area | Suburban (Dulles) |
|-------------|-------------------|

Existing/Interim Condition

| | |
|-------------------|--|
| Existing Segments | US Route 50 (John Mosby Highway) to Riding Center Drive; Existing VA Route 659 (Gum Spring Road) to VA Route 659 Relocated (Northstar Boulevard) |
|-------------------|--|

| | |
|-------------------------------|--|
| Functional Class | Major Collector |
| Lanes/Right of Way | 4/120 feet – Additional ROW may be needed for interchange(s), turn lanes and bicycle/pedestrian facilities |
| Description | U4M. Controlled access median divided urban collector. Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 40 mph design speed. |
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. |

Ultimate Condition

| | |
|-------------------------------|---|
| Functional Class | Major Collector |
| Lanes/Right of Way | 4/120 – Additional ROW may be needed for interchange(s), turn lanes and bicycle/pedestrian facilities |
| Description | U4M. Controlled access median divided urban collector. Grade-separated interchange at US Route 50 (John Mosby Highway). Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 40 mph design speed. |
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. |

174. VA Route 2200 - Tall Cedars Parkway (US Route 50 South Collector Road)

| | |
|-------------|--|
| Segment | VA Route 659 Relocated (Northstar Boulevard) west to Lenah Loop Road |
| Policy Area | Transition |

Ultimate Condition

| | |
|-------------------------------|---|
| Functional Class | Major Collector |
| Lanes/Right of Way | 2/70 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities |
| Description | R2. Local access undivided rural collector. Left and right turn lanes required at major intersections. 40 mph design speed. |
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. |

175. VA Route 2201 - South Riding Boulevard

| | |
|-------------|--|
| Segment | Quarry Road (US Route 50 North Collector Road) south to VA Route 742 Extended (Defender Drive/Poland Road) |
| Policy Area | Suburban (Dulles) |

Existing Condition

| | |
|--------------------|---|
| Existing Segment | US Route 50 (John Mosby Highway) to Defender Drive |
| Functional Class | Minor Collector |
| Lanes/Right of Way | 4/120 feet |
| Description | U4M. Controlled access median divided urban collector. 40 mph design speed. |

Ultimate Condition

| | |
|-------------------------------|--|
| Functional Class | Minor Collector |
| Lanes/Right of Way | 6/120 feet – Additional ROW may be needed for interchange(s), turn lanes and bicycle/pedestrian facilities |
| Description | U6M. Controlled access median divided urban collector. Grade-separated interchange at Route 50 (John Mosby Highway). Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 40 mph design speed. |
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. |

176. VA Route 2201 - South Riding Boulevard

| | |
|-------------|---|
| Segment | VA Route 742 Extended (Defender Drive/Poland Road) south to VA Route 2200 (Tall Cedars Parkway) |
| Policy Area | Suburban (Dulles) |

Existing/Ultimate Condition

| | |
|-------------------------------|--|
| Functional Class | Minor Collector |
| Lanes/Right of Way | 4/120 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities |
| Description | U4M. Controlled access median divided urban collector. Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 40 mph design speed. |
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. |

177. VA Route 2237 - Edgewater Street

| | |
|-------------|---|
| Segment | VA Route 2200 (Tall Cedars Parkway) south to VA Route 742 (Poland Road) |
| Policy Area | Suburban (Dulles) |

Existing/Ultimate Condition

| | |
|------------------|-----------------|
| Functional Class | Minor Collector |
|------------------|-----------------|

| | |
|-------------------------------|---|
| Lanes/Right of Way | 4/70 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities |
| Description | U4. Local access undivided urban collector. Left and right turn lanes required at major intersections. 40 mph design speed. |
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. |

178. VA Route 2237 - Edgewater Street

| | |
|-------------|--|
| Segment | VA Route 742 (Poland Road) south and west to VA Route 606 (Loudoun County Parkway) |
| Policy Area | Suburban (Dulles) |

Existing/Ultimate Condition

| | |
|-------------------------------|---|
| Functional Class | Minor Collector |
| Lanes/Right of Way | 4/70 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities |
| Description | U4. Local access undivided urban collector. A short segment just south of VA Route 742 (Poland Road) is built as a two-lane (R2) section. Left and right turn lanes required at major intersections. Design speed varies. |
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. |

179. VA Route 2298 (Formerly VA Route 772 Relocated) - Mooreview Parkway

| | |
|-------------|--|
| Segment | VA Route 267 (Dulles Greenway) interchange (opposite VA Route 772 (Ashburn Village Boulevard)) west and south to VA Route 607-(Loudoun County Parkway) |
| Policy Area | Suburban (Ashburn) |

Existing/Interim Condition

| | |
|-------------------------------|---|
| Existing Segments | VA Route 267 (Dulles Greenway) interchange to Amberleigh Farm Drive; Existing VA Route 772 (Old Ryan Road) to VA Route 607 (Loudoun County Parkway) |
| Functional Class | Major Collector |
| Lanes/Right of Way | 4/120 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities |
| Description | U4M. Controlled access median divided urban collector. Grade-separated interchange at VA Route 267 (Dulles Greenway). Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 45 mph design speed. |
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. |

Ultimate Condition

| | |
|-------------------------------|--|
| Functional Class | Major Collector |
| Lanes/Right of Way | 6/120 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities |
| Description | U6M. Controlled access median divided urban collector. Grade-separated interchange at VA Route 267 (Dulles Greenway). To be constructed as a four-lane divided (U4M) section from VA Route 645 (Croson Lane) south to Existing VA Route 772 (Old Ryan Road) to function as a six-lane divided (U6M) facility in tandem with Old Ryan Road. Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 45 mph design speed. |
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. |

180. VA Route 2400 - Lansdowne Boulevard

| | |
|-------------|--|
| Segment | VA Route 2401 (Riverside Parkway) south to VA Route 7 (Harry Byrd Highway) interchange |
| Policy Area | Suburban (Ashburn) |

Existing/Interim Condition

| | |
|-------------------------------|--|
| Functional Class | Major Collector |
| Lanes/Right of Way | 4-6/120 feet – Additional ROW may be needed for interchange(s), turn lanes and bicycle/pedestrian facilities |
| Description | U4M/U6M. Controlled access median divided urban collector. Grade-separated interchange at VA Route 7 (Harry Byrd Highway). Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 50 mph design speed. |
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. |

Ultimate Condition

| | |
|--------------------|--|
| Functional Class | Major Collector |
| Lanes/Right of Way | 6/120 feet – Additional ROW may be needed for interchange(s), turn lanes and bicycle/pedestrian facilities |
| Description | U6M. Controlled access median divided urban collector. Grade-separated interchange at VA Route 7 (Harry Byrd Highway). Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 50 mph design speed. |

| | |
|-------------------------------|---|
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. |
|-------------------------------|---|

181. VA Route 2401 - Riverside Parkway (VA Route 7 North Collector Road)

| | |
|---------|---|
| Segment | VA Route 607 (Loudoun County Parkway) west to VA Route 659 (Belmont Ridge Road/Upper Belmont Place) |
|---------|---|

| | |
|-------------|--------------------|
| Policy Area | Suburban (Ashburn) |
|-------------|--------------------|

Existing/Interim Condition

| | |
|-------------------|---|
| Existing Segments | VA Route 7 (Harry Byrd Highway) at VA Route 3000 (Lexington Drive) to west of VA Route 823 (Smith Circle); VA Route 2020 Extended (Ashburn Village Boulevard) west to VA Route 659 (Belmont Ridge Road/Upper Belmont Place) |
|-------------------|---|

| | |
|------------------|-----------------|
| Functional Class | Major Collector |
|------------------|-----------------|

| | |
|--------------------|--|
| Lanes/Right of Way | 4/120 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities |
|--------------------|--|

| | |
|-------------|--|
| Description | U4M. Controlled access median divided urban collector. Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 40 mph design speed. |
|-------------|--|

| | |
|-------------------------------|---|
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. |
|-------------------------------|---|

Ultimate Condition

| | |
|------------------|-----------------|
| Functional Class | Major Collector |
|------------------|-----------------|

| | |
|--------------------|--|
| Lanes/Right of Way | 6/120 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities |
|--------------------|--|

| | |
|-------------|--|
| Description | U6M. Controlled access median divided urban collector. Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 40 mph design speed. |
|-------------|--|

| | |
|-------------------------------|---|
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. |
|-------------------------------|---|

182. VA Route 2401 - Riverside Parkway (VA Route 7 North Collector Road)

| | |
|---------|--|
| Segment | VA Route 659 (Belmont Ridge Road/Upper Belmont Place) west to Fort Evans Road/VA Route 773 (River Creek Parkway) |
|---------|--|

| | |
|-------------|-----------------------------------|
| Policy Area | Suburban (Ashburn), Leesburg JLMA |
|-------------|-----------------------------------|

Existing Condition

| | |
|------------------|-----------------|
| Functional Class | Major Collector |
|------------------|-----------------|

| | |
|--------------------|--------------|
| Lanes/Right of Way | 2-4/120 feet |
|--------------------|--------------|

| | |
|-------------|--|
| Description | U2/U4M. Controlled access undivided and median divided urban collector. Two-lane (U2) section between Goose Creek bridge and VA Route 773 (River Creek Parkway); four-lane divided (U4M) section elsewhere. Design speed varies. |
|-------------|--|

Ultimate Condition

| | |
|-------------------------------|--|
| Functional Class | Major Collector |
| Lanes/Right of Way | 4/120 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities |
| Description | U4M. Controlled access median divided urban collector. Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 40 mph design speed. |
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. |

183. VA Route 2700 - Augusta Drive

| | |
|-------------|---|
| Segment | VA Route 7 (Harry Byrd Highway) north to Maple Leaf Place (VA Route 7 North Collector Road) |
| Policy Area | Suburban (Potomac) |

Existing/Ultimate Condition

| | |
|-------------------------------|---|
| Functional Class | Minor Collector |
| Lanes/Right of Way | 4/70 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities |
| Description | U4. Local access undivided urban collector. Left and right turn lanes required at major intersections. 40 mph design speed. |
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. |

184. Airport Area Connector

| | |
|-------------|--|
| Segment | Battlefield Parkway south to VA Route 653 Relocated (Crosstrail Boulevard) just east of VA Route 267 (Dulles Greenway) |
| Policy Area | Town of Leesburg, Leesburg JLMA |

Ultimate Condition

| | |
|--------------------|---|
| Functional Class | Major Collector |
| Lanes/Right of Way | 4/90 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities. ROW width within Town of Leesburg determined by Town. |
| Description | U4M. Local access median divided urban collector. Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 40 mph design speed. |

| | |
|-------------------------------|---|
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements; bicycle and pedestrian facilities within Town of Leesburg subject to Town review. |
|-------------------------------|---|

185. Arcola Boulevard (VA Route 606 Extended / West Spine Road)

| | |
|---------|--|
| Segment | VA Route 606 (Old Ox Road) and VA Route 607 (Loudoun County Parkway) (near existing VA Route 842 (Arcola Road)/VA Route 606 (Old Ox Road) intersection) south and west to US Route 50 (John Mosby Highway) |
|---------|--|

| | |
|-------------|-------------------|
| Policy Area | Suburban (Dulles) |
|-------------|-------------------|

Existing Condition

| | |
|--------------------|--|
| Existing Segment | VA Route 842 (Arcola Road) from VA Route 606 (Old Ox Road) south and west to VA Route 621 (Evergreen Mills Road) |
| Functional Class | Local/Secondary Road |
| Lanes/Right of Way | 2/Varies |
| Description | R2. Local access undivided rural secondary road. Design speed varies. |

Interim Condition

| | |
|-------------------------------|---|
| Functional Class | Major Collector |
| Lanes/Right of Way | 4/120 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities |
| Description | U4M. Controlled access median divided urban collector. Intersection with US Route 50 (John Mosby Highway) opposite Gum Spring Road Relocated (approximately 1,000 feet east of the Existing VA Route 659 (Gum Spring Road)/US Route 50 intersection). Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 50 mph design speed. |
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. |

Ultimate Condition

| | |
|--------------------|--|
| Functional Class | Major Collector |
| Lanes/Right of Way | 6/120 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities |
| Description | U6M. Controlled access median divided urban collector. Grade-separated interchanges at VA Route 607 (Loudoun County Parkway) and at US Route 50 (John Mosby Highway). US Route 50 interchange to be located approximately 1,000 feet east of the Existing VA Route 659 (Gum Spring Road)/US Route 50 intersection. Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 50 mph design speed. |

| | |
|-------------------------------|---|
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. |
|-------------------------------|---|

186. Battlefield Parkway

| | |
|---------|---|
| Segment | US Route 15 (Leesburg Bypass) east and south to Fort Evans Road |
|---------|---|

| | |
|-------------|------------------|
| Policy Area | Town of Leesburg |
|-------------|------------------|

Existing/Ultimate Condition

| | |
|-------------------------------|---|
| Functional Class | Determined by Town of Leesburg |
| Lanes/Right of Way | 4/ROW determined by Town of Leesburg – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities |
| Description | U4M. Local access median divided urban collector. Left and right turn lanes required at all intersections. Median crossover spacing and design speed determined by VDOT and Town of Leesburg. |
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements; bicycle and pedestrian facilities subject to Town of Leesburg review. |

187. Battlefield Parkway

| | |
|---------|--|
| Segment | Fort Evans Road south and west to US Route 15 (South King Street) (opposite Meade Drive) |
|---------|--|

| | |
|-------------|------------------|
| Policy Area | Town of Leesburg |
|-------------|------------------|

Existing Condition

| | |
|--------------------|---|
| Existing Segment | Fort Evans Road to VA Route 621 (Evergreen Mills Road) |
| Functional Class | Determined by Town of Leesburg |
| Lanes/Right of Way | 2-4/Varies |
| Description | U2/U4M. Local access undivided and median divided urban collector. Grade-separated interchange at VA Route 267 (Dulles Greenway). Two-lane (U2) section between VA Route 267 (Dulles Greenway) interchange and VA Route 621 (Evergreen Mills Road); four-lane divided (U4M) section elsewhere. Design speed varies. |

Interim Condition

| | |
|--------------------|--|
| Functional Class | Determined by Town of Leesburg |
| Lanes/Right of Way | 4/ROW determined by Town of Leesburg – Additional ROW may be needed for interchange(s), turn lanes and bicycle/pedestrian facilities |
| Description | U4M. Local access median divided urban collector. Grade-separated interchange at VA Route 267 (Dulles Greenway). Left and right turn lanes required at all intersections. Median crossover spacing and design speed determined by VDOT and Town of Leesburg. |

| | |
|-------------------------------|---|
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements; bicycle and pedestrian facilities subject to Town of Leesburg review. |
|-------------------------------|---|

Ultimate Condition

| | |
|-------------------------------|---|
| Functional Class | Determined by Town of Leesburg |
| Lanes/Right of Way | 6/ROW determined by Town of Leesburg – Additional ROW may be needed for interchange(s), turn lanes and bicycle/pedestrian facilities |
| Description | U6M. Local access median divided urban collector. Grade-separated interchange at VA Route 7 (East Market Street) and at VA Route 267 (Dulles Greenway). Left and right turn lanes required at all intersections. Median crossover spacing and design speed determined by VDOT and Town of Leesburg. |
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements; bicycle and pedestrian facilities subject to Town of Leesburg review. |

188. Centergate Drive

| | |
|-------------|---|
| Segment | Claude Moore Avenue to Moorefield Boulevard |
| Policy Area | Suburban (Ashburn) |

Ultimate Condition

| | |
|-------------------------------|---|
| Functional Class | Minor Collector |
| Lanes/Right of Way | 3/70 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities |
| Description | U3. Local access undivided urban collector. Left and right turn lanes required at major intersections. 20 mph design speed. |
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. |

189. Claude Moore Avenue

| | |
|-------------|--|
| Segment | Existing VA Route 772 (Old Ryan Road) to VA Route 607 (Loudoun County Parkway) |
| Policy Area | Suburban (Ashburn) |

Ultimate Condition

| | |
|--------------------|---|
| Functional Class | Minor Collector |
| Lanes/Right of Way | 3-4/70 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities |
| Description | U3/U4. U3 section between Existing VA Route 772 (Old Ryan Road) and Centergate Drive; U4 section between Centergate Drive and VA Route 607 (Loudoun County Parkway). Local access undivided urban |

collector. Left and right turn lanes required at major intersections. 20 mph design speed.

Bicycle/Pedestrian Facilities Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.

190. Devin Shafron Drive

Segment Greenway Transit Connector (Metro Center Drive) east to VA Route 643 (Shellhorn Road)

Policy Area Suburban (Ashburn)

Existing/Ultimate Condition

Functional Class Minor Collector

Lanes/Right of Way 4/70 feet

Description U4. Local access undivided urban collector. 40 mph design speed.

Bicycle/Pedestrian Facilities Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.

191. East Gate View Drive

Segment VA Route 609 (Pleasant Valley Road) west to VA Route 2200 (Tall Cedars Parkway)

Policy Area Suburban (Dulles)

Existing/Ultimate Condition

Functional Class Minor Collector

Lanes/Right of Way 4/70 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities

Description U4. Local access undivided urban collector. Left and right turn lanes required at major intersections. 40 mph design speed.

Bicycle/Pedestrian Facilities Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.

192. Foley Branch Boulevard (formerly Dulles South Boulevard)

Segment VA Route 606 (Loudoun County Parkway) (approximately 2,300 feet south of VA Route 620 (Braddock Road)) west to VA Route 659 Relocated (Northstar Boulevard) (approximately 2,000 feet north of the Prince William County Line)

Policy Area Transition

Ultimate Condition

Functional Class Minor Collector

| | |
|-------------------------------|--|
| Lanes/Right of Way | 4/120 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities |
| Description | R4M. Controlled access median divided rural collector. Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 40 mph design speed. |
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. |

193. Fort Evans Road

| | |
|-------------|---|
| Segment | VA Route 773 (River Creek Parkway) (opposite VA Route 2401 (Riverside Parkway)) west to Battlefield Parkway |
| Policy Area | Town of Leesburg, Leesburg JLMA |

Existing Condition

| | |
|--------------------|---|
| Functional Class | Minor Collector |
| Lanes/Right of Way | 2-4/Varies |
| Description | R2/U4M. Local access undivided rural and median divided urban collector. Design speed varies. |

Ultimate Condition

| | |
|-------------------------------|---|
| Functional Class | Minor Collector |
| Lanes/Right of Way | 4/ROW determined by Town of Leesburg – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities |
| Description | U4M. Local access median divided urban collector. Left and right turn lanes required at major intersections. Design speed determined by VDOT and Town of Leesburg. |
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements; bicycle and pedestrian facilities within Town of Leesburg subject to Town review. |

194. Glascock Boulevard (US Route 50 North Collector Road)/Dulles South Parkway

| | |
|-------------|--|
| Segment | VA Route 606 (Loudoun County Parkway) west to VA Route 659 Relocated (Northstar Boulevard) |
| Policy Area | Suburban (Dulles) |

Interim Condition

| | |
|--------------------|--|
| Functional Class | Major Collector |
| Lanes/Right of Way | 4/120 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities |
| Description | U4M. Controlled access median divided urban collector. Refer to VDOT Road Design Manual for median crossover spacing requirements. |

Left and right turn lanes required at all intersections. 40 mph design speed.

Bicycle/Pedestrian Facilities

Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.

Ultimate Condition

Functional Class

Major Collector

Lanes/Right of Way

6/120 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities

Description

U6M. Controlled access median divided urban collector. Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 40 mph design speed.

Bicycle/Pedestrian Facilities

Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.

195. Glascock Boulevard (US Route 50 North Collector Road)/Midnight Run Drive

Segment

VA Route 659 Relocated (Northstar Boulevard) west to Lenah Loop Road

Policy Areas

Suburban (Dulles), Transition

Ultimate Condition

Functional Class

Major Collector

Lanes/Right of Way

2/70 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities

Description

R2. Local access undivided rural collector. Left and right turn lanes required at all intersections. 40 mph design speed.

Bicycle/Pedestrian Facilities

Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.

196. Greenway East-West Connector (Wynridge Drive)/Claude Moore Avenue

Segment

Wynridge Drive – VA Route 901 (Claiborne Parkway) east to VA Route 2298 (Mooreview Parkway); Claude Moore Avenue – VA Route 2298 (Mooreview Parkway) east to Existing VA Route 772 (Old Ryan Road)

Policy Area

Suburban (Ashburn)

Existing/Ultimate Condition

Functional Class

Minor Collector

Lanes/Right of Way

4/90 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities

| | |
|-------------------------------|--|
| Description | U4M. Controlled access median divided urban collector. Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 40 mph design speed. |
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. |

197. Greenway Loop Road (Centergate Drive / Barrister Street)

| | |
|-------------|---|
| Segment | Moorefield Boulevard east and north to VA Route 643 Extended (Shellhorn Road) |
| Policy Area | Suburban (Ashburn) |

Existing/Ultimate Condition

| | |
|-------------------------------|---|
| Existing Segment | Approximately 1,000 feet west of VA Route 607 (Loudoun County Parkway) to State Street |
| Functional Class | Minor Collector |
| Lanes/Right of Way | 4/70 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities |
| Description | U4. Local access undivided urban collector. Grade-separated crossing of VA Route 267 (Dulles Greenway). Left and right turn lanes required at major intersections. 40 mph design speed. |
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. |

198. Greenway Loop Road (Barrister Street)

| | |
|-------------|--|
| Segment | VA Route 643 Extended (Shellhorn Road) north to VA Route 1071 Extended/789 Extended (Prentice Drive) |
| Policy Area | Suburban (Ashburn) |

Ultimate Condition

| | |
|-------------------------------|--|
| Functional Class | Minor Collector |
| Lanes/Right of Way | 4/90 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities |
| Description | U4M. Controlled access median divided urban collector. Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 40 mph design speed. |
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. |

199. Greenway Transit Connector (Metro Center Drive)

| | |
|---------|---|
| Segment | Moorefield Boulevard in Moorefield Station to VA Route 643 (Shellhorn Road), including Transit Connector Bridge over VA Route 267 (Dulles Greenway) |
|---------|---|

| | |
|-------------|--------------------|
| Policy Area | Suburban (Ashburn) |
|-------------|--------------------|

Ultimate Condition

| | |
|------------------|-----------------|
| Functional Class | Minor Collector |
|------------------|-----------------|

| | |
|--------------------|---|
| Lanes/Right of Way | 2/60 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities |
|--------------------|---|

| | |
|-------------|---|
| Description | U2. Local access undivided urban collector. Transit Connector Bridge over VA Route 267 (Dulles Greenway) to be a maximum of 46 feet in width. Left and right turn lanes required at major intersections. 25 mph design speed. |
|-------------|---|

| | |
|-------------------------------|---|
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. |
|-------------------------------|---|

200. Greenwood Drive (Round Hill)

| | |
|---------|--|
| Segment | VA Route 719 (Main Street/Woodgrove Road) east to VA Route 1320 (Evening Star Drive) |
|---------|--|

| | |
|-------------|-----------------|
| Policy Area | Round Hill JLMA |
|-------------|-----------------|

Ultimate Condition

| | |
|------------------|-----------------|
| Functional Class | Minor Collector |
|------------------|-----------------|

| | |
|--------------------|--|
| Lanes/Right of Way | 2/50 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities. |
|--------------------|--|

| | |
|-------------|---|
| Description | R2. Local access undivided rural collector. Left and right turn lanes recommended at major intersections. Design speed determined by VDOT, Town of Round Hill and DTCL. |
|-------------|---|

| | |
|-------------------------------|---|
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. |
|-------------------------------|---|

201. High Street Extended (Round Hill)

| | |
|---------|--|
| Segment | VA Route 719 (Main Street) west and south to VA Route 7 Business (West Loudoun Street) |
|---------|--|

| | |
|-------------|-------------------------------------|
| Policy Area | Town of Round Hill, Round Hill JLMA |
|-------------|-------------------------------------|

Existing Condition

| | |
|------------------|---|
| Existing Segment | VA Route 719 (Main Street) to a point approximately 1,000 feet west |
|------------------|---|

| | |
|------------------|----------------------|
| Functional Class | Local/Secondary Road |
|------------------|----------------------|

| | |
|--------------------|----------|
| Lanes/Right of Way | 2/Varies |
|--------------------|----------|

| | |
|-------------------------------|---|
| Description | R2. Local access undivided rural secondary road. Design speed varies. |
| Ultimate Condition | |
| Functional Class | Minor Collector |
| Lanes/Right of Way | 2/50 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities. ROW width within Town of Round Hill determined by Town. |
| Description | R2. Local access undivided rural collector. Left and right turn lanes recommended at major intersections. Design speed determined by VDOT, Town of Round Hill and DTCL. |
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements; bicycle and pedestrian facilities within Town of Round Hill subject to Town review. |

202. Hope Parkway

| | |
|------------------------------------|---|
| Segment | Battlefield Parkway north and east to Sycolin Road |
| Policy Area | Town of Leesburg |
| Existing/Ultimate Condition | |
| Functional Class | Determined by Town of Leesburg |
| Lanes/Right of Way | 4/ROW determined by Town of Leesburg – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities |
| Description | U4. Local access undivided urban collector. Left and right turn lanes required at major intersections. Design speed varies. |
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements; bicycle and pedestrian facilities subject to Town of Leesburg review. |

203. Kincaid Boulevard Extended

| | |
|------------------------------------|--|
| Segment | Battlefield Parkway south to VA Route 653 Relocated (Crosstrail Boulevard) |
| Policy Area | Town of Leesburg, Leesburg JLMA |
| Existing/Ultimate Condition | |
| Existing Segment | Battlefield Parkway to Rhonda Place |
| Functional Class | Minor Collector |
| Lanes/Right of Way | 4/90 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities. ROW width within Town of Leesburg determined by Town. |
| Description | U4M. Controlled access median divided urban collector. Refer to VDOT Road Design Manual for median crossover spacing requirements. |

| | |
|-------------------------------|---|
| | Left and right turn lanes required at all intersections. 40 mph design speed. |
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements; bicycle and pedestrian facilities within Town of Leesburg subject to Town review. |
| 204. Lenah Loop Road | |
| Segment | VA Route 621 (Evergreen Mills Road) south to Glascock Boulevard (US Route 50 North Collector Road) |
| Policy Area | Transition |
| Ultimate Condition | |
| Functional Class | Minor Collector |
| Lanes/Right of Way | 2/70 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities |
| Description | R2. Local access undivided rural collector. May incorporate portions of existing VA Route 616 (Fleetwood Road) alignment. Left and right turn lanes required at major intersections. 40 mph design speed. |
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. |
| 205. Lenah Loop Road | |
| Segment | Glascock Boulevard (US Route 50 North Collector Road) south to VA Route 2200 (Tall Cedars Parkway) (US Route 50 South Collector Road) |
| Policy Area | Transition |
| Ultimate Condition | |
| Functional Class | Minor Collector |
| Lanes/Right of Way | 4/70 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities |
| Description | U4. Local access undivided urban collector. May incorporate portions of existing VA Route 600 (Lenah Road) alignment. Left and right turn lanes required at major intersections. 40 mph design speed. |
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. |
| 206. Lenah Loop Road | |
| Segment | VA Route 2200 (Tall Cedars Parkway) south and east VA Route 659 Relocated (Northstar Boulevard) |
| Policy Area | Transition |
| Ultimate Condition | |
| Functional Class | Minor Collector |

| | |
|-------------------------------|---|
| Lanes/Right of Way | 2/70 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities |
| Description | R2. Local access undivided rural collector. Left and right turn lanes required at major intersections. 40 mph design speed. |
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. |

207. Maple Leaf Place / Jennings Farm Drive (VA Route 7 North Collector Road)

| | |
|-------------|---|
| Segment | VA Route 2700 (Augusta Drive) east to VA Route 821 (Lakeland Drive) |
| Policy Area | Suburban (Potomac) |

Existing/Ultimate Condition

| | |
|-------------------------------|---|
| Existing Segments | Maple Leaf Place – VA Route 2700 (Augusta Drive) east to just beyond Tamarack Ridge Square; Jennings Farm Drive – VA Route 821 (Cedar Drive) east to VA Route 821 (Lakeland Drive) |
| Functional Class | Minor Collector |
| Lanes/Right of Way | 2/50 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities |
| Description | U2. Local access undivided urban collector. ROW reservation in place for future connection of existing segments. Left and right turn lanes recommended at major intersections. 40 mph design speed. |
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. |

208. Miller Drive

| | |
|-------------|---|
| Segment | Hope Parkway east and south to Sycolin Road |
| Policy Area | Town of Leesburg |

Existing/Ultimate Condition

| | |
|-------------------------------|---|
| Existing Segments | Hope Parkway to Tolbert Lane; Blue Seal Drive to Sycolin Road |
| Functional Class | Determined by Town of Leesburg |
| Lanes/Right of Way | 4/ROW determined by Town of Leesburg – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities |
| Description | U4. Local access undivided urban collector. Left and right turn lanes required at major intersections. Design speed varies. |
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements; bicycle and pedestrian facilities subject to Town of Leesburg review. |

209. Moorefield Boulevard

Segment VA Route 772 Relocated (Mooreview Parkway) (opposite Dulles Greenway Eastbound Off-Ramp) southeast to VA Route 607 (Loudoun County Parkway) (opposite VA Route 645 Extended (Westwind Drive))

Policy Area Suburban (Ashburn)

Ultimate Condition

Functional Class Minor Collector

Lanes/Right of Way 3-4/70 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities

Description /U4. U2 section between Beth Street and Centergate Drive; U4 section between VA Route 772 Relocated (Mooreview Parkway) and Beth Street, and between Centergate Drive and VA Route 607 (Loudoun County Parkway). Left and right turn lanes required at major intersections. 20 mph design speed.

Bicycle/Pedestrian Facilities Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements.

210. Purcellville VA Route 7 North Collector Road

Segment Eastern Purcellville JLMA Boundary (east of VA Route 287 (Berlin Turnpike)) west to VA Route 690 (Hillsboro Road)

Policy Area Purcellville JLMA, Town of Purcellville

Ultimate Condition

Functional Class Minor Collector

Lanes/Right of Way 4/70 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities. ROW width within Town of Purcellville determined by Town.

Description U4. Local access undivided urban collector. Left and right turn lanes recommended at major intersections. 40 mph design speed.

Bicycle/Pedestrian Facilities Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements; bicycle and pedestrian facilities within Town of Purcellville subject to Town review.

211. Purcellville South Collector Road (“A” Street)

Segment VA Route 7 Business (East Main Street) (opposite VA Route 287 (Berlin Turnpike)) south and west to VA Route 690 (32nd Street South)

Policy Area Town of Purcellville, Purcellville JLMA

Existing/Ultimate Condition

Existing Segments Approximately 1,800 feet south of VA Route 7 Business (East Main Street) to VA Route 690 (32nd Street South)

Functional Class Minor Collector

| | |
|-------------------------------|---|
| Lanes/Right of Way | 2/Varies – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities. Ultimate ROW width determined by Town of Purcellville. |
| Description | U2. Local access undivided urban collector. Roundabout at VA Route 7 Business/VA Route 287 (Berlin Turnpike). Left and right turn lanes recommended at major intersections. 40 mph design speed. |
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements; bicycle and pedestrian facilities within Town of Purcellville subject to Town review. |

212. Quarry Road (US Route 50 North Collector Road)

| | |
|-------------|--|
| Segment | VA Route 609 (Pleasant Valley Road) west to VA Route 2201 (South Riding Boulevard) |
| Policy Area | Suburban (Dulles) |

Ultimate Condition

| | |
|-------------------------------|--|
| Functional Class | Major Collector |
| Lanes/Right of Way | 4/70 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities |
| Description | U4. Controlled access median divided urban collector. Will follow existing Route 873 (Wade Drive) alignment. Left and right turn lanes required at major intersections. 40 mph design speed. |
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements. |

213. Russell Branch Parkway (Leesburg)

| | |
|-------------|--|
| Segment | VA Route 653 (Cochran Mill Road) west to Trailview Boulevard |
| Policy Area | Leesburg JLMA, Town of Leesburg |

Ultimate Condition

| | |
|-------------------------------|---|
| Functional Class | Minor Collector |
| Lanes/Right of Way | 4/90 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities. ROW width within Town of Leesburg determined by Town. |
| Description | U4. Local access undivided urban collector. Left and right turn lanes recommended at major intersections. 40 mph design speed. |
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements; bicycle and pedestrian facilities subject to Town of Leesburg review. |

214. Trailview Boulevard

| | |
|----------|---|
| Segments | VA Route 659 (Belmont Ridge Road) (opposite VA Route 2150 (Gloucester Parkway)) west over Goose Creek to future Keystone Drive in the Town of Leesburg; Battlefield Parkway west to Lawson Road |
|----------|---|

| | |
|-------------|---|
| Policy Area | Suburban (Ashburn), Leesburg JLMA, Town of Leesburg |
|-------------|---|

Existing/Ultimate Condition

| | |
|------------------|--|
| Existing Segment | Approximately 800 feet east of Cardinal Park Drive west to Lawson Road |
|------------------|--|

| | |
|------------------|-----------------|
| Functional Class | Major Collector |
|------------------|-----------------|

| | |
|--------------------|--|
| Lanes/Right of Way | 4/90 feet – Additional ROW may be needed for turn lanes and bicycle/pedestrian facilities. ROW width within Town of Leesburg determined by Town. |
|--------------------|--|

| | |
|-------------|--|
| Description | U4M. Controlled access median divided urban collector. Refer to VDOT Road Design Manual for median crossover spacing requirements. Left and right turn lanes required at all intersections. 45 mph design speed. |
|-------------|--|

| | |
|-------------------------------|---|
| Bicycle/Pedestrian Facilities | Refer to Table A in Appendix 6 and to Loudoun County Bicycle and Pedestrian Mobility Master Plan for facilities requirements; bicycle and pedestrian facilities within Town of Leesburg subject to Town review. |
|-------------------------------|---|



Appendix 2

Corridor Adequacy Analysis

I. Overview

This appendix documents the analysis process and resulting recommendations that were used to inform the update of the County's road network as contained within the 2010 CTP. The focus of this analysis was an extensive assessment of corridor adequacy along the 14 major travel corridors within the road network. These corridors include: Route 7 East, Route 7 West, Route 9, Route 50, the Dulles Greenway, Snickersville Turnpike, Routes 340/671 ("Between the Hills"), Dulles South – Sterling, Route 28, Ashburn/Broadlands, Routes 659/659 Relocated, Route 15, Route 704, and Route 287/690. The analysis performed involved several steps, including:

- Assessment of base year (2005) congestion based on traffic analysis and stakeholder input
- Assessment of future year (2030) congestion with the financially committed future transportation network
- Assessment of future year (2030) congestion with the 2001 CTP full improvements
- Identification of opportunities and constraints to addressing the residual congestion after 2001 CTP improvements, including analysis of the full demand in the major corridors, the amount of capacity needed to address demand, and excess demand after reaching the limits of potential capacity in each corridor. Limits include environmental, community, and policy constraints as well as a number of lanes beyond which a road could not be reasonably expanded.
- Alternatives analysis to identify the impacts of alternative corridor improvements on congestion within the corridor, including impacts to other corridors and induced traffic impacts.
- Identification of recommended corridor solutions, including, transit, land use and travel demand management strategies to reduce the traffic impacts of anticipated growth in the county.

The sections that follow describe relevant background information, information on tools and measures used for analysis, information on growth, land use and travel patterns, and a discussion on baseline conditions. The remainder of the appendix details the results of the corridor analyses for each of the key travel corridors. It should be noted that the recommendations that are included in this Appendix do not necessarily reflect those that were ultimately incorporated into the revised road network upon completion of the adoption process. For adopted network, see Chapter 2 and Appendix 1.

A. Background

In a separate report, the "Task 1b" Technical Memorandum, the initial transportation needs analysis is documented including background on travel patterns, transit service, stakeholder input, and the initial assessment of 2005 and 2030 congestion. A brief summary of the background information is provided in this appendix, and further details can be found in the Task 1b memorandum. As explained in the next section of this appendix, the modeling tools for assessing congestion were refined throughout the development of the CTP update, resulting in some changes to the initial congestion analysis results reported in the Task 1b report. The final congestion analysis for 2005 and each of the 2030 networks that were analyzed (funded improvements, 2001 CTP, and Revised CTP recommendations) are provided in this appendix. A report on *Traffic Abatement Through Land Use and Travel Management Solutions*, dated May, 2007, was also prepared in concert with the corridor adequacy analysis. Relevant portions of the background and recommendations of this document are included in this appendix.



B. Tools and Measures for Analysis

The analysis for the Revised Countywide Transportation Plan was developed using industry-accepted planning tools that forecast travel demand on the County road network. These forecasts are based on observed travel patterns and behaviors, forecasted growth in population, households and employment, and the characteristics of the existing and planned roadway network. The forecasts also draw from the Metropolitan Washington Council of Governments (MWCOC) regional travel model to reflect travel demand from the counties surrounding Loudoun County, including anticipated growth in traffic from adjacent counties in Maryland, West Virginia, and Virginia (Clarke and Fauquier counties) and the planned population growth, employment growth, and planned roadway networks in Fairfax and Prince William Counties.

The transportation needs analysis focuses on measures of travel and congestion as reported by the travel model. These measures include average daily traffic (ADT) on roadways, vehicle miles of travel (VMT) in the County, vehicle hours of travel (VHT) and congested VHT, or delay, in the County, and level of service (LOS). The LOS measurements compare the capacity of each section of roadway to the anticipated traffic level during the peak period of travel demand (such as the morning rush-hours). This provides an indicator of when travel demand is greater than capacity for a given section of roadway, resulting in congestion. As described in Chapter 2, LOS was employed in a manner consistent with the County's adopted standards and was calculated using *Highway Capacity Manual* methodology. LOS is reported in varying conditions from A to F like a report card, with A through C describing excellent to good travel conditions, D as the beginning of delay but still manageable, E as congested with noticeable delay; and F as heavily congested with significant delay. For multi-lane highways, LOS D represents conditions where traffic levels are approximately 90% of capacity, LOS E represents 100% of capacity, and LOS F represents greater than 100% of capacity. Conditions up through LOS D are considered acceptable for planning purposes in Loudoun County, while LOS E and F are considered congested. In the Corridor Adequacy Analysis, "excess demand" is identified as the amount of travel demand that exceeds the LOS D standard on a facility with LOS E or F, while "excess capacity" refers to the amount of additional traffic a facility with good LOS could handle before exceeding the LOS D standard. Note that some facilities may show a LOS E or F that is treated differently, and not necessarily resolved directly by a specific transportation improvement, when other circumstances and/or recommendations may address the condition (such as proposed transit service, travel demand management strategies, or excess capacity on parallel roads).

C. Growth, Land Use and Travel Patterns

The projections for growth used in the CTP update are based on the *Revised General Plan*, adopted July 23, 2001 as amended through January 1, 2007 and the associated forecasts of 2030 population and employment. These forecasts are distributed throughout the County according to the *Revised General Plan* as amended. The amount of forecasted growth from 2000 to 2030 includes an additional 300,000 people, an increase of over 184 percent. Households are expected to grow by a similar percentage, adding over 100,000 households. Employment is expected to increase by about 200 percent, adding over 200,000 jobs.

Employment and population appear to be balanced in Loudoun County. However, about half of all commuters who live in Loudoun work outside the County, and about half of all Loudoun workers live outside the county. Most cross-commuting occurs between Loudoun and Fairfax Counties, but many workers also commute to and through Loudoun County from the west.

Thus, travel patterns in Loudoun County are comprised of a combination of local and through-trips. Overall, nearly 90 percent of trips in Loudoun have the beginning and/or end in Loudoun County, while roughly 10 percent of trips both begin and end outside the county, traveling all the way through. However, the latter "through-trips" account for nearly one-third of travel (VMT) in the County. In general, both types of trips contribute to congestion on County roads. Strategies to reduce the amount of through-trips include providing park-and-ride lots and adding commuter transit services. Strategies to reduce the impact of local trips include providing good networks of local streets that can keep some trips off of main roads, providing bicycle and



pedestrian facilities and providing circulator transit service linking residential and commercial areas. Strategies to reduce the amount of cross-commuting include providing for unmet housing needs in Loudoun County targeting County workers in particular; development of office space that can attract high-paying jobs to Loudoun County; and encouragement of telecommuting.

D. Baseline Conditions

The maps provided at the end of this section show the traffic levels and level of service for the 2005 roadway network and the 2030 roadway network of funded transportation improvements (Constrained Long Range Plan or CLRP). Maps are also provided for the 2030 forecast LOS results of the 2001 CTP improvements, and finally for the revised CTP network. The 2005 data reflects congested areas including Route 15 north of Leesburg, the southern portion of Route 9, portions of Route 7 in the Ashburn area, and Waxpool Road near Route 28. With the CLRP transportation improvements, which constitute a 22 percent increase in lane-miles compared to the 2005 roadway system, the projected growth to the year 2030 would bring over a 200% increase in miles of travel (VMT) and nearly a 200 percent increase in hours of travel (VHT). However, delay would increase dramatically, increasing by over 660 percent compared to 2005. (See Figures 2-5 through 2-8 at the end of the appendix)

The 2001 CTP network would add double the lane-miles of roadway as the funded improvements in the CLRP network, yet travel would increase slightly less for both miles and hours of travel. This indicates that travel would become more efficient as a result of the improvements without inducing travel in aggregate. Most importantly, the increase in delay over 2005 would be reduced to about 550 percent. Nevertheless, this reflects a substantial amount of congestion, as indicated by the maps at the end of the appendix. The percent of roadway lane-miles at LOS E or F would be about 25 percent in 2030 with the CLRP network and about 20% with the 2001 CTP network.

The corridor analysis and recommendations that are described in the remainder of the appendix identify the areas where additional capacity can reduce congestion, while acknowledging that some congestion cannot be fully addressed without also inducing traffic. A balance is sought, taking into account additional strategies such as traffic abatement through land use and transit services; therefore the LOS graphics for the revised CTP network do not show LOS D or better on all parts of the network. At a system-wide level, the revised CTP network adds an additional 12 percent of lane-miles in addition to the 2001 CTP network, for a total of 62 percent more lane-miles than existed in 2005. Increases in VMT are slightly higher for the revised CTP than for the CLRP network, but the increase in vehicle hours of travel falls between the results for the CLRP and 2001 CTP networks (see Figures 2-5 through 2-8 at the end of the appendix). The amount of delay with the revised CTP network is lowest of the 2030 forecasts and the lane-miles of roadway at LOS E or F falls from 20 percent with the 2001 CTP to about 17 percent with the revised CTP; however nearly all of the net improvement is a reduction in LOS F roadways.

II. Corridor Analysis and Recommendations

In 2006 when the update of the Countywide Transportation Plan was commissioned by the Board of Supervisors, 14 distinct corridors were identified for analysis. The adequacy of each corridor for projected 2030 conditions was assessed, assuming the 2001 CTP projects, and recommendations were developed to address transportation needs. The following sections describe the adequacy, constraints, and recommendations for each corridor. Maps providing the projected Level of Service for 2030 with the 2001 CTP and with the recommended additional improvements are provided at the end of Appendix 2.

A. Corridor 1 – Route 7 East

Corridor Description – Route 7 East covers the area from Leesburg to the Fairfax County line that includes all or portions of Route 7, Edwards Ferry Road, River Creek Parkway, Crosstrail Boulevard, Fort Evans Road, Riverside Drive, Algonkian Parkway, Gloucester Parkway, Russell Branch Parkway, Trailview Boulevard, Nokes Boulevard, Palisade Parkway, and the Route 7 North Collector. These roads, as planned



in the CTP provide limited access along Route 7 as far east as Route 28, and controlled access east of Route 28. The corridor includes local access on a dense network of parallel east-west routes and north-south routes, featuring existing or planned interchanges with Route 7 at Algonkian Parkway, Cascades Parkway, Route 28, Loudoun County Parkway, Ashburn Village Boulevard, Claiborne Parkway/Lansdowne Boulevard, and Belmont Ridge Road, as well as River Creek Parkway/Crosstrail Boulevard and Battlefield Parkway in the Town of Leesburg. A corridor management plan has been successful in providing limited access to the Route 7 corridor between Leesburg and Route 28. Adjacent development includes planned communities, office and industrial parks and retail centers. East of Route 28, more direct access is provided to Route 7 and retail/ commercial development is immediately adjacent to the roadway. Older, suburban-density subdivisions are also located along this portion of the corridor which is largely built-out at present.

Corridor Adequacy – From the Leesburg Bypass to Route 28, Route 7 is six lanes and will be upgraded to a limited-access freeway; this portion of the corridor as planned appears to be adequate for projected future demand. However, east of Route 28, corridor demand greatly exceeds the capacity of the planned six-lane major arterial (with traffic signals). Severe congestion is anticipated on this portion of Route 7. Due to regional connections and the direct connection Route 7 provides to the regional core, this route is attractive to through-traffic as well as local traffic. Widening the eastern portion of Route 7 is problematic due to development in the immediate area. The portion of Route 7 west of Route 28 does have adequate right-of-way and/or setbacks for eight lanes, but adding these lanes for general use would stimulate demand, adding to the pressure on the eastern portion of the corridor.

Recommendations:

- Add a fourth lane to Route 7 westbound only between Cedar Drive and Cascades Parkway.
- Improve the flow of traffic through access management and signal coordination east of Route 28, and if redevelopment affords the opportunity, seek to add additional interchanges in place of signalized intersections.
- Develop two additional lanes on the portion of Route 7 west of Route 28; consider utilization of one lane of this portion of Route 7 in each direction for HOVs and express bus service. (These are not necessarily the same lanes as the new lanes would likely be to the outside of existing Route 7 and the HOV lanes would likely be the interior lanes).
- To address local traffic, increase the transit service along the corridor that connects residential areas to commercial areas and improves connections between commercial areas.
- To address through-traffic, support increased commuter bus service, including the provision of additional park-and-ride lots.
- Consider the realignment of Riverside Parkway between Ashburn Village Boulevard/Janelia Farm Boulevard and Loudoun County Parkway to a closer, more parallel route. This would increase use of Riverside Parkway and relieve traffic on Route 7 both parallel to and east of this portion of Riverside Parkway. (Now specified in the Countywide Transportation Plan with CPAM 2014-0001)

B. Corridor 2 – Route 7 West

Corridor Description – From Leesburg west to the West Virginia State line, this corridor includes all or portions of Route 7, Business Route 7, Dry Mill Road, Evening Star Drive, and Purcellville Southern Collector. The Towns of Round Hill, Purcellville and Hamilton are located in this corridor, as well as a wide variety of land uses including small to large subdivisions, retail and other commercial development, agriculture and rural land uses.



Corridor Adequacy – The development of Route 7 Bypass to six lanes, including new interchanges at Route 690 and White Gate Place, will adequately serve 2030 travel demand west of Route 287. East of Route 287, some congestion is anticipated, with severe congestion projected to occur east of the bypass/business route merge. This route hosts substantial through-traffic as well as local traffic, as it serves commuters from Clarke County, Virginia and Jefferson County, West Virginia traveling to Leesburg and points east. Due to the high capacity and limited access of this corridor, it is a better route to serve through-traffic than other corridors such as Route 9.

In the alternatives analysis, it was noted that traffic on Route 7 originating from the north, such as Routes 690 and 287, would likely divert to Route 15 if Route 15 were improved; thus the degree of forecast congestion on Route 7, particularly in the eastern part of this corridor, depends to some degree on Route 15 improvements north of Leesburg. The White Gate interchange is critical to traffic flow in the eastern portion of this corridor; this improvement includes a set of frontage roads to maintain parcel access. It also appears that the traffic on the Leesburg Bypass on the west side of town is higher if the Route 7 capacity is increased and Route 15 north capacity is limited, and the reverse is also true. This is discussed further under the Route 15 corridor.

Some congestion also is projected in portions of Purcellville and Hamilton, much of which is localized in nature and not an indication of a regional bottleneck.

Recommendations:

- Adding turning lanes where possible on developed portions of Business Route 7 to improve through-put and improve safety; encourage access management for future development
- Widening Route 7 to eight lanes east of the bypass/business route merge
- To address through-traffic, support increased commuter bus service, including the provision of additional park-and-ride lots.

C. Corridor 3 – Route 9

Corridor Description – The Route 9 corridor extends from the West Virginia state line to the terminus of Route 9 at Route 7. Capturing the inter-relationships of the routes connecting and supporting east-west travel in the area, the corridor includes Route 9, portions of Route 7 Bypass, and routes connecting Routes 9 and 7 including Route 287, Hamilton Station Road, and Hillsboro Road. The Town of Hillsboro is located in the corridor as well as a variety of rural development ranging from agriculture to subdivisions.

Corridor Adequacy – Route 9 is planned to remain a 2-lane road and, as such, would experience congestion in 2030 along much of the corridor, including severe congestion in Hillsboro and at the easternmost link before reaching Route 7. Some congestion on Hillsboro Road (Route 690) is also anticipated.

While a variety of alternatives for this corridor were examined, ultimately it was concluded that major capacity improvements were not appropriate for this corridor given its rural and historical context. Despite congestion concerns, only a few specific spot improvements are recommended. The exception is the easternmost link of Route 9 east of Clarke's Gap Road, which would have severe congestion in 2030 unless it was directly improved.

Recommendations:

- Adding turning lanes where possible on developed portions of Route 9 east of Route 287 to improve through-put and improve safety; encourage access management for future development.



- Provide traffic calming on Route 9 in Hillsboro and, where appropriate, east to Clarkes Gap Road, including reduced speed limits and roundabouts at appropriate intersections.
- Widening Route 9 to a four-lane highway east of Clarkes Gap Road.

D. Corridor 4 – Route 50

Corridor Description – The Route 50 corridor includes the portions of Route 50 entirely within Loudoun County, from the Fauquier County line west of Middleburg to the Fairfax County Line. The corridor includes the network of parallel and connector routes in the eastern portion, including the Route 50 North Collector, East Gate View Drive, Defender Drive, Tall Cedars Parkway, and Braddock Road. Traffic calming improvements are underway in the western portion of the corridor west of Lenah, including a set of roundabouts at Gilberts Corner (intersection of Route 50 and Route 15). East of Lenah, the corridor passes through Transition and Suburban Policy areas and provides access to retail and office development, as well as residential developments located particularly in the southern portion of the corridor along Tall Cedars Parkway and Braddock Road.

Corridor Adequacy – The 2001 CTP includes 6-lane capacity on Route 50 east of the Lenah Connector, on Tall Cedars Parkway east of North Star Boulevard, and on the Route 50 North Collector between North Star Boulevard and the Loudoun County Parkway. Braddock Road is slated for upgrade to four lanes east of the Lenah Connector. Interchanges or overpasses are planned for the Route 50 intersections from North Star Boulevard east to the Fairfax County line. With these improvements, the anticipated conditions in this corridor are expected to be generally acceptable, with some areas of moderate congestion on Route 50 between Middleburg and Lenah, and severe congestion south of Dulles Airport, immediately east of Loudoun County Parkway.

The alternatives analysis looked at a variety of ways to alleviate the congestion on Route 50 west of Lenah, as the traffic patterns indicated that there was demand for traffic to move north from Route 15 towards the Greenway and also east towards Dulles, which was forcing traffic to use this portion of Route 50. The recommendations to serve the northbound travel demand are discussed in the Route 15 Corridor (southern portion) and involve the extension of a relocated Route 860 across Route 50 and extending south and west to Route 15 near the intersection with Braddock Road. To serve the eastbound traffic, better connections from Route 15 south of Route 50 to Braddock Road were tested. West of Gilbert's Corner, excess demand is not substantial enough to warrant additional capacity; through-put and safety can be enhanced with appropriate turning lanes and access management.

Recommendations:

- Removing local access to Route 50 east of North Star Boulevard, including the development of overpasses and interchanges, as well as driveway consolidation and focusing local access along Tall Cedars Parkway and the Route 50 North Collector.
- Adding turning lanes where possible on developed portions of Route 50 between Middleburg and Lenah to improve through-put and improve safety.
- Widening Braddock Road to 4 lanes from the proposed Route 860 Connector to the Lenah Connector.
- Loop the southern leg of the Lenah Connector to intersect with North Star Boulevard.
- Implementing Travel Demand Management strategies in the Dulles area, including transit and telecommuting, to reduce vehicle trips.
- Consider making Route 50 between Loudoun County Parkway and Route 28 (in Fairfax County) part of an HOV network, using one travel lane in each direction for HOV and express bus service at least in the peak periods.



- Encourage networking of streets in subdivisions, connections between subdivisions, and interparcel access in commercial development to reduce the number of trips on the major collectors and Route 50.

E. Corridor 5 – Dulles Greenway

Corridor Description – This corridor extends from the Leesburg Bypass to the Fairfax County Line and includes the Dulles Greenway and the Dulles Metrorail corridor, as well as roads accessing this highway corridor including Route 625 (portion), Sycolin Road, Shellhorn Road, Route 789, Broadlands Boulevard, Truro Parish Road, and Route 606 (portion). In the 2001 CTP, the highway corridor was planned to be six lanes, as was Route 606, while the other routes in the corridor were planned as four lane roads. The Greenway corridor is under the management of the private entity, TRIP II, until 2057, although its fare structure is subject to approval by the State Corporation Commission. Any new access to the Greenway is subject to the approval of the Commonwealth Transportation Board.

Corridor Adequacy – With the planned improvements included in the 2001 CTP, the Dulles Greenway Corridor sufficiently meets 2030 travel demand except for some areas of moderate congestion along the Greenway, particularly near Leesburg, and severe congestion is anticipated on Route 606 crossing the Greenway and on the Greenway west of Route 28. On the roads parallel to the Greenway, Route 625 (Waxpool Road) is projected to have severe congestion in the eastern portion approaching Route 28.

Alternatives analysis determined that, as improvements to the routes in western Loudoun County attract additional traffic, and if the Greenway is widened in the western segments, induced travel demand will create congestion on additional segments of the Greenway. It appears the Greenway could be widened to the outside between the Leesburg Bypass and Claiborne Parkway; east of that point, widening is also deemed feasible by TRIP II through the use of retaining walls and other methods to minimize corridor width. Widening to the inside is limited by the need to reserve the median for a potential future transit corridor to Leesburg, should Metrorail be further extended beyond Route 772 or some other use be approved. In the alternatives analysis, a preliminary assessment of HOV designation for one lane in each direction of the Greenway was conducted. This would optimize use of any added lanes and, where congestion is forecast to occur, provide an incentive for HOV and express bus use, as these modes would have a travel time advantage. The assessment was encouraging, with close to 10,000 ADT anticipated to use the HOV lane and approximately 12,000 ADT reduced from the other lanes, resulting in a net reduction in vehicles on the facility.

Recommendations:

- Widen the Greenway to the outside to a total of eight lanes from the Leesburg Bypass to the Dulles Toll Road.
- Consider designating at least one lane in each direction of the Greenway for HOVs and express bus service.
- To address excess demand on collectors, particularly Waxpool Road, take planning measures to encourage the minimization of local trips on major collector routes. These measures include preparing small area plans that ensure the networking of local streets in and between suburbs as well as land use mixes that reduce trips and trip lengths.

F. Corridor 6 - Snickersville

Corridor Description – This corridor consists of the full length of Snickersville Turnpike, from Route 7 near the Clarke County line to Route 50 near Aldie. The road is a two-lane rural road and historic turnpike.



Corridor Adequacy – Snickersville Turnpike is adequate to serve anticipated 2030 traffic at a good level of service.

Recommendations:

- No capacity or traffic management strategies appear to be needed for this corridor.

G. Corridor 7 – Between the Hills (Routes 340 and 671)

Corridor Description – This corridor includes Route 340 and Harpers Ferry Road (Route 671) from the West Virginia border in the northwest corner of the County to Route 9. These are two lane rural roads.

Corridor Adequacy – While this is a rural corridor, it does appear to serve regional commuter trips including many from Maryland and West Virginia. The alternatives analysis indicates that, as long as Route 9 to the east is congested, this route has manageable travel demand and acceptable level of service.

Recommendations – Since West Virginia traffic has the option of taking Route 340 south through Jefferson County to Route 7, the recommended strategy for this corridor is to discourage long-distance commuters from using it. Recommendations include:

- Traffic calming such as lower speed limits, roundabouts and aesthetic treatments to reduce speeds.
- Expansion of long-distance commuter bus service by providing park-and-ride capacity and added service on Routes 9 and 7.

H. Corridor 8 – Dulles South - Sterling

Corridor Description – This corridor loops all the way around Dulles Airport from Sterling in the north to the Route 50 corridor in the south. It includes the Tri-County Parkway, West Spine Road, Loudoun County Parkway (portion), Old Ox Road (portion), Moran Road, Cedar Green Road, Pacific Boulevard, Route 625 (portion), Sterling Boulevard and Sugarland Road. The 2001 CTP plans for these roads to be six lanes, in the case of the Parkways and Old Ox Road, and four lanes for the remainder of the collectors in the corridor.

Corridor Adequacy - This corridor is anticipated to have moderate to severe congestion on many of the routes in 2030, particularly the Tri-County Parkway, Loudoun County Parkway, Old Ox Road, and the northeastern portion of Route 625 (Church Road). Corridor demand analysis indicated that more capacity in the roads looping around Dulles Airport would attract more traffic, and while congestion would be reduced, it would not necessarily be eliminated. Strategies to provide adequate capacity in this corridor include combinations of adding lanes and upgrading key facilities to limited access freeways. The loop around Dulles Airport was tested for designation of one HOV lane in each direction, with promising results in the preliminary travel demand analysis. The anticipated congestion in the corridor combined with a time advantage for HOV and transit would help reduce vehicle travel in the area.

In the Dulles South area, travel demand strategies are also needed to address congestion. On Route 625 (Church Road), it appears that the section adjacent to Route 28 could be widened, but much of the route is constrained by existing development. It also appears that relief of Route 7 congestion could help Route 625 as it currently provides an alternative for traffic seeking to avoid the Route 7 bottleneck at the Fairfax County line.



Recommendations:

- Widening Route 606 from Loudoun County Parkway to Route 28 to eight lanes and upgrading this portion of the corridor to a limited access freeway. Connecting routes will need to be studied to identify optimum interchange location and feasibility of frontage road and access maintenance.
- Widen Loudoun County Parkway from Route 50 to the Dulles Greenway to eight lanes and upgrading the portion from Route 50 to Route 606 as a limited access freeway.
- Widen Church Road to six lanes from Route 28 to Cascades Parkway.
- Travel Demand Management strategies in the Dulles area, including transit and telecommuting, to reduce vehicle trips.
- Consider making Loudoun County Parkway and Route 606 between Route 50 and Route 28 part of an HOV network, using one travel lane in each direction for HOV and express bus service at least in the peak periods.
- Encourage networking of streets in subdivisions, connections between subdivisions, and interparcel access in commercial development to reduce the number of trips on the major collectors, the Tri-County Parkway and Loudoun County Parkway.

I. Corridor 9 – Route 28

Corridor Description – The Route 28 corridor extends from Route 7 in the north to the Fairfax County line and includes parallel roads from the 2001 CTP including Atlantic Boulevard, Pacific Boulevard, Loudoun County Parkway (portion) and Russell Branch Parkway (portion), as well as a portion of the Dulles Greenway. Route 28 is planned as an eight-lane limited access freeway, with a network of parallel and cross routes with four lanes. This is one of the major employment corridors in the county, including suburban office parks and providing access to the thousands of jobs at Dulles Airport.

Corridor Adequacy – The primary congestion problems anticipated with the 2001 CTP improvements are in the vicinity of the Dulles Airport entrance. In this area, Route 28 and the Dulles Greenway are anticipated to be severely congested in 2030. The parallel and access roads in this corridor appear adequate, as planned, to meet 2030 travel demand.

The Fairfax County Transportation Plan Map shows Route 28 as a 10-lane facility with possible HOV and/or transit operations. The alternatives analysis considered matching the 10-lane section in the portion of Route 28 south of Route 606 as well as HOV operations for Route 28. The preliminary analysis of travel demand with the HOV lanes was promising. The anticipated congestion in the corridor combined with a time advantage for HOV and transit would help reduce vehicle travel in the area. As a major employment corridor, this area also has the potential to reduce vehicular travel through the development of transit service and encouragement of employer-based travel demand management programs.

Recommendations in this corridor include:

- Widening Route 28 to ten lanes south of Route 606 if it would not require major reconstruction of existing interchanges.
- Consider Route 28 as part of an HOV network, using one travel lane in each direction for HOV and express bus service at least in the peak periods.
- Encourage travel demand management, particularly through the development of transit service focused on major employers and employer-based travel demand management strategies such as flextime and telecommuting.



J. Corridor 10 – Ashburn/Broadlands

Corridor Description – This radial corridor spans the area from Route 7 to Route 606 including Claiborne Parkway, Ashburn Road, Ashburn Village Boulevard, and most of Loudoun County Parkway. In the 2001 CTP, these roads were planned as six-lane thoroughfares serving as major circulators for the newer and planned subdivisions and commercial centers of the Ashburn/Broadlands area.

Corridor Adequacy – As envisioned in the 2001 CTP, all of the roads in this corridor would have adequate capacity to meet demand in 2030. During corridor demand analysis, it was noted that the removal of bottlenecks and/or increased capacity in the Dulles South area would add demand to the portion of Loudoun County Parkway between the Greenway and Route 606. There do not appear to be major constraints to widening Loudoun County Parkway in this area.

Recommendations:

- Widen the ultimate cross section of Loudoun County Parkway to eight lanes between the Dulles Greenway and Route 606.
- To preserve the functional network of collectors in this corridor and encourage planning measures to reduce the impact of development on these routes. These measures include preparing small area plans that ensure the networking of local streets in and between suburbs as well as land use mixes that reduce trips and trip lengths.

K. Corridor 11 – 659/659 Relocated (North Star Boulevard)

Corridor Description – This corridor extends from Route 7 to the Prince William County line, following Belmont Ridge Road to Route 659 Relocated (North Star Boulevard). This corridor serves several communities in the Suburban and Transition Policy Areas, providing access to Route 50, the Dulles Greenway and Route 7. This corridor was envisioned to have six lanes in the 2001 CTP.

*Corridor Adequacy – As planned in the CTP, this corridor has adequate capacity to serve 2030 demand, except for a small link immediately north of the convergence of North Star Boulevard and Belmont Ridge Road. This localized bottleneck can likely be addressed with local operational improvements. In the alternatives analysis, the portion of North Star Boulevard between Evergreen Mills Road and Braddock Road demonstrated moderate congestion in scenarios where the greatest capacity was added to area roadways such as Route 15 and Route 606 / Loudoun County Parkway. With the CTP update recommendations, this entire corridor is projected to perform adequately.

Recommendations – Corridor preservation strategies to maintain operations on these routes, such as access management and networking of local roads in new developments along the corridor, are all that is needed to maintain the sufficiency of this corridor.

Corridor Adequacy was based on modeling performed for the adopted June 15, 2010 Countywide Transportation Plan. In CPAM 2010-0001, Belmont Ridge Road, Belmont Ridge Road from Route 7 to Route 645 (Croson Lane) goes from a six-lane median divided roadway to a four-lane median divided roadway which, in the near term, has adequate capacity to serve demand. However, degraded levels of service may be experienced as 2030 demand is approached and this segment may need to be reevaluated.

L. Corridor 12 – Route 15

Corridor Description – This corridor spans the entire county from Frederick County, Maryland, to Prince William County, Virginia. Roadways included in the corridor are Route 15, Business Route 15 and Battlefield Parkway in Leesburg. While not officially included in the corridor, Route 860 south of Evergreen Mills Road is also relevant to this corridor. Route 15 is planned in the 2001 CTP to have two



lanes, while the bypass portion of Route 15 is planned to have six lanes south of Route 7 and four lanes north of Route 7. Battlefield Parkway is planned to have six lanes, forming a parallel route around the Route 15 Bypass, except for the northernmost link which is planned to have four lanes. Outside of Leesburg, the Route 15 corridor is largely rural, with clusters of development fronting the road in several areas including Point of Rocks and Lucketts. The noted portion of Route 860 is shown in the 2001 CTP in its current state, a two-lane rural road, with houses lining the corridor particularly at the southern end. An historic church is located on the south side of Route 50 immediately across from the Route 860 terminus.

Corridor Adequacy – The northern portion of Route 15 is projected to be moderately to severely congested in 2030, with several miles of severely congested roadway having long periods of poor LOS.

In the alternatives analysis, several solutions for congestion on the northern portion of Route 15 were examined, however, again it was concluded that major capacity improvements were not appropriate for this corridor given its rural and historical context.

Within Leesburg, projected congestion on the Leesburg Bypass will require two additional lanes for a total of six, from the Route 15/Business Route 15 split to Route 7, and auxiliary lanes between Route 7 and the Dulles Greenway may also be needed to reduce congestion. The revised CTP with eight lanes on Route 7 west of the bypass indicates that the western portion of the bypass would also be congested, but this result depends on the timing of the Route 7/Leesburg Bypass improvements.

The southern portion of Route 15 is projected to carry substantially fewer vehicles in 2030 than the northern portion, and most of this roadway will remain uncongested in 2030 as a two-lane road. The exceptions are the northern and southern ends of the route; immediately south of Leesburg to Harmony Church Road, congestion would occur on a 2-lane Route 15 in 2030. Also, congestion is projected to occur south of Gilbert's Corner (Route 50 intersection) by 2030.

The alternatives analysis examined a variety of strategies to address the southern congestion, which revealed that there is demand for northbound traffic in this area to access the Greenway if given a shorter and uncongested route. The Route 860 connector was tested to meet this demand, and it was determined that this route if improved and extended to Route 15 in the vicinity of Braddock Road, would tap into demand warranting a four-lane improvement. This route is already planned to be four lanes from Evergreen Mills Road north to Sycolin Road, which in turn accesses routes with Greenway interchanges to the east and west. To avoid community and historical constraints, some portion of Route 860 north of Route 50 would need to be relocated to the west. From the Route 860 extension south to the four-lane planned section of Route 15 in Prince William County, Route 15 should be widened to four lanes to meet future travel demand.

Recommendations:

- Widening of the Leesburg Bypass to a continuous six-lane freeway in its entirety (adding two lanes to the 2001 CTP improvements north of Route 7 on the east side), and eventually adding collector/distributor lanes between Route 7 and the Greenway.
- Consideration of future six-lane portions of the Leesburg Bypass to incorporate HOV operations.
- To reduce through-traffic, provision of park-and-ride lots and commuter bus service in the Route 15 north corridor.
- Widening of Route 15 from Leesburg south to Harmony Church Road to four lanes.
- Development of a Route 860 Connector and upgrading Route 860 south of Evergreen Mills Road, as well as widening Route 15 south of its connection to this route, to provide a continuous four-lane connection from Route 15 in Prince William County to Sycolin Road near the Greenway.



M. Corridor 13 – Route 704/Route 9

Corridor Description – This corridor extends southeast from Route 287 at Route 9 to Route 15 south of Leesburg; it includes a portion of Route 9 and Harmony Church Road. The 2001 CTP did not include any planned improvements to these two-lane rural roads.

Corridor Adequacy – The Route 9 portion of this corridor is anticipated to have some moderate congestion in 2030, while Harmony Church Road appears adequate to serve projected traffic demand.

Recommendations – To protect the functionality of this corridor, some traffic calming on Route 9 is recommended to encourage through-traffic to use Route 7 instead of Route 9.

N. Corridor 14 – Route 287/Route 690

Corridor Description – This corridor extends from the Maryland border to the southern portion of Purcellville and includes Route 287, Route 690, Saint Louis Road, and the Purcellville Southern Collector. These roads were planned to remain two-lane rural roads in the 2001 CTP, with the exception of the four-lane Purcellville Southern Collector.

Corridor Adequacy – The alternatives analysis indicates that Route 287 would be congested along much of its length between Maryland and Route 9 in 2030, as would Route 690 between Route 287 and Route 9. The most severe congestion would occur in Lovettsville. Lovettsville and points north are constrained from widening by development and terrain.

During alternatives analysis, a variety of improvements were tested directly and indirectly on Route 287 which revealed that all of the north-south routes in the northwestern part of the county are inter-related. Volumes on Route 287 remain high for a two-lane roadway, although the corridor does experience a higher-than typical balance of two-way directional traffic because some Loudoun travelers are going north to the MARC trains in Maryland while other travelers are commuting in the more typical south and east direction. The revised CTP LOS analysis indicates that this corridor will be adequate at two lanes, but will have some congestion on the north side of Lovettsville.

Recommendations:

- Improvement of the Route 690 connection to Route 7 Bypass via an interchange that also provides access from the south in or near Purcellville. This interchange may be moved west of existing Route 690 as long as access to the interchange from existing Route 690 is included.

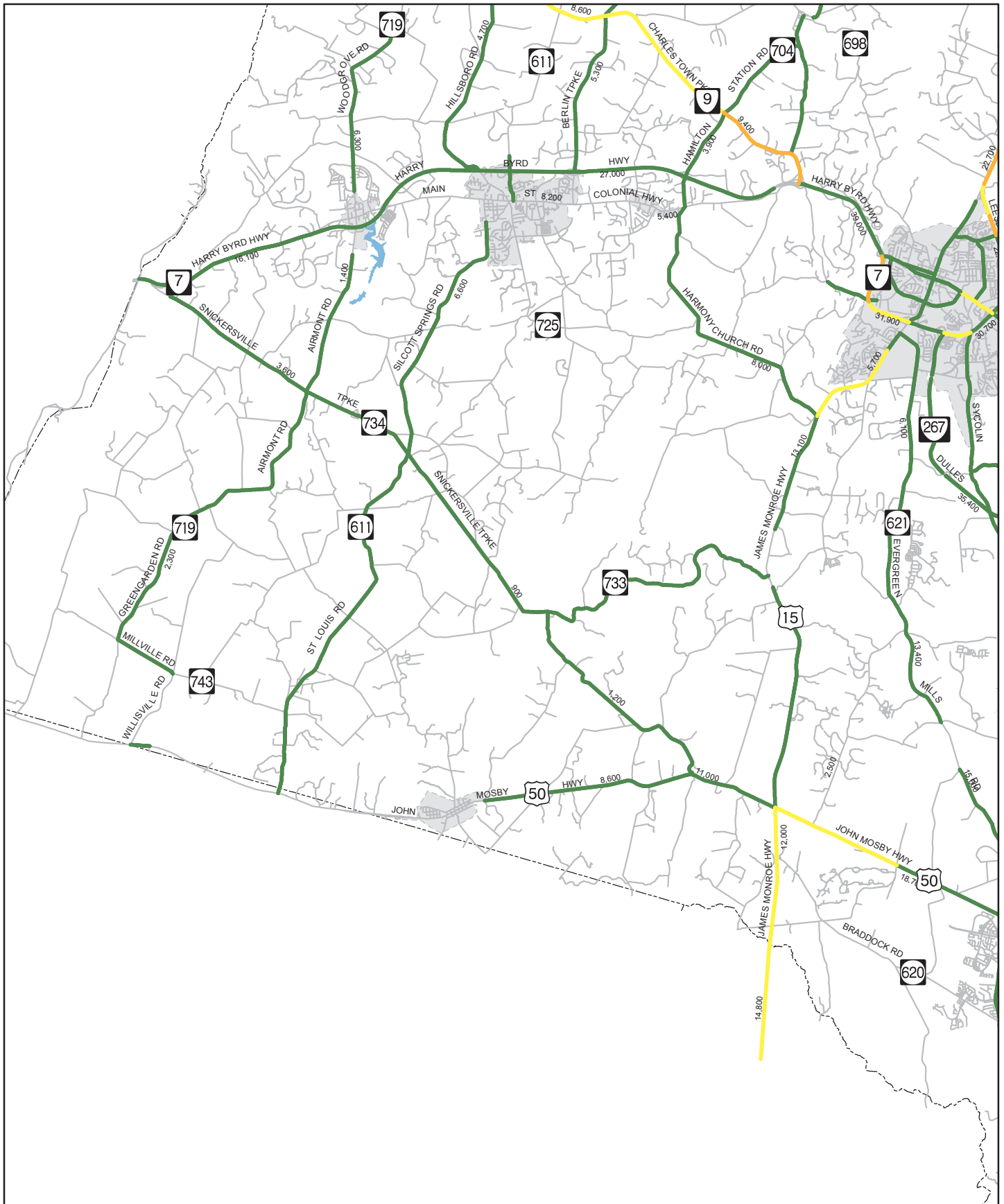
O. Corridor Maps and Figures

The following figures and maps provide the data referenced in this appendix:

| | |
|--------------|--|
| Figure A2-1a | 2005 Network Level of Service, East |
| Figure A2-1b | 2005 Network Level of Service, Southwest |
| Figure A2-1c | 2005 Network Level of Service, Northwest |
| Figure A2-2a | 2030 Level of Service, Constrained Long Range Plan (CLRP) Network, East |
| Figure A2-2b | 2030 Level of Service, Constrained Long Range Plan (CLRP) Network, Southwest |
| Figure A2-2c | 2030 Level of Service, Constrained Long Range Plan (CLRP) Network, Northwest |
| Figure A2-3a | 2030 Level of Service, 2001 CTP Network, East |
| Figure A2-3b | 2030 Level of Service, 2001 CTP Network, Southwest |
| Figure A2-3c | 2030 Level of Service, 2001 CTP Network, Northwest |
| Figure A2-4a | 2030 Level of Service, Revised CTP Network, East |



| | |
|--------------|---|
| Figure A2-4b | 2030 Level of Service, Revised CTP Network, Southwest |
| Figure A2-4c | 2030 Level of Service, Revised CTP Network, Northwest |
| Figure A2-5 | Lane-Miles of Roadway by Network |
| Figure A2-6 | Vehicle Miles of Travel by Network |
| Figure A2-7 | Vehicle Hours of Travel by Network |
| Figure A2-8 | Daily Hours of Delay by Network |
| Figure A2-9 | Percent Lane Miles by LOS |



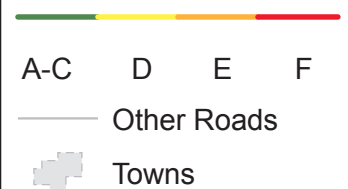
Loudoun County Countywide Transportation Plan Update

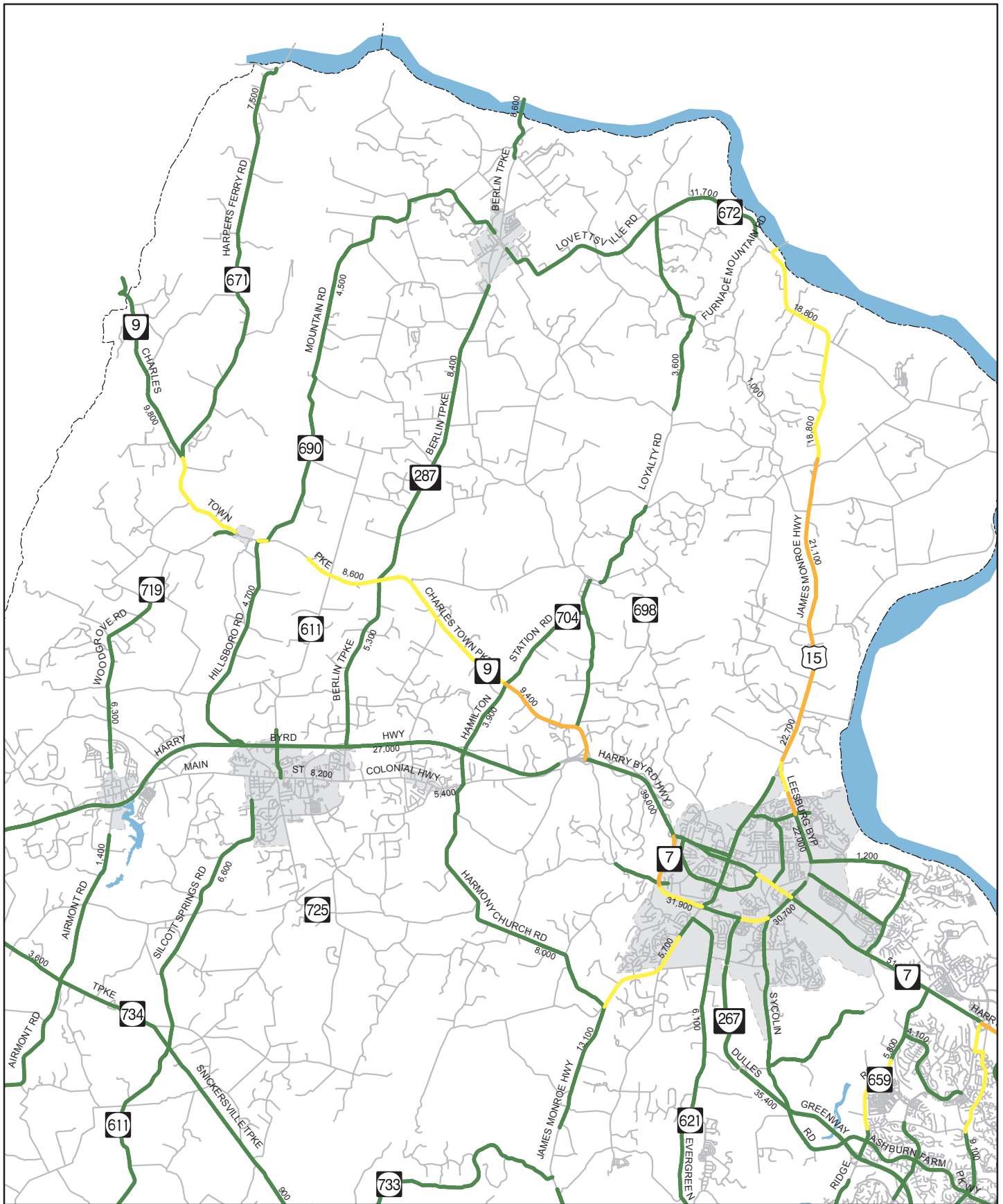
Figure A2-1b
2005 Network
Level of Service
Southwest



0 1 2
Miles

Level of Service





Loudoun County Countywide Transportation Plan Update

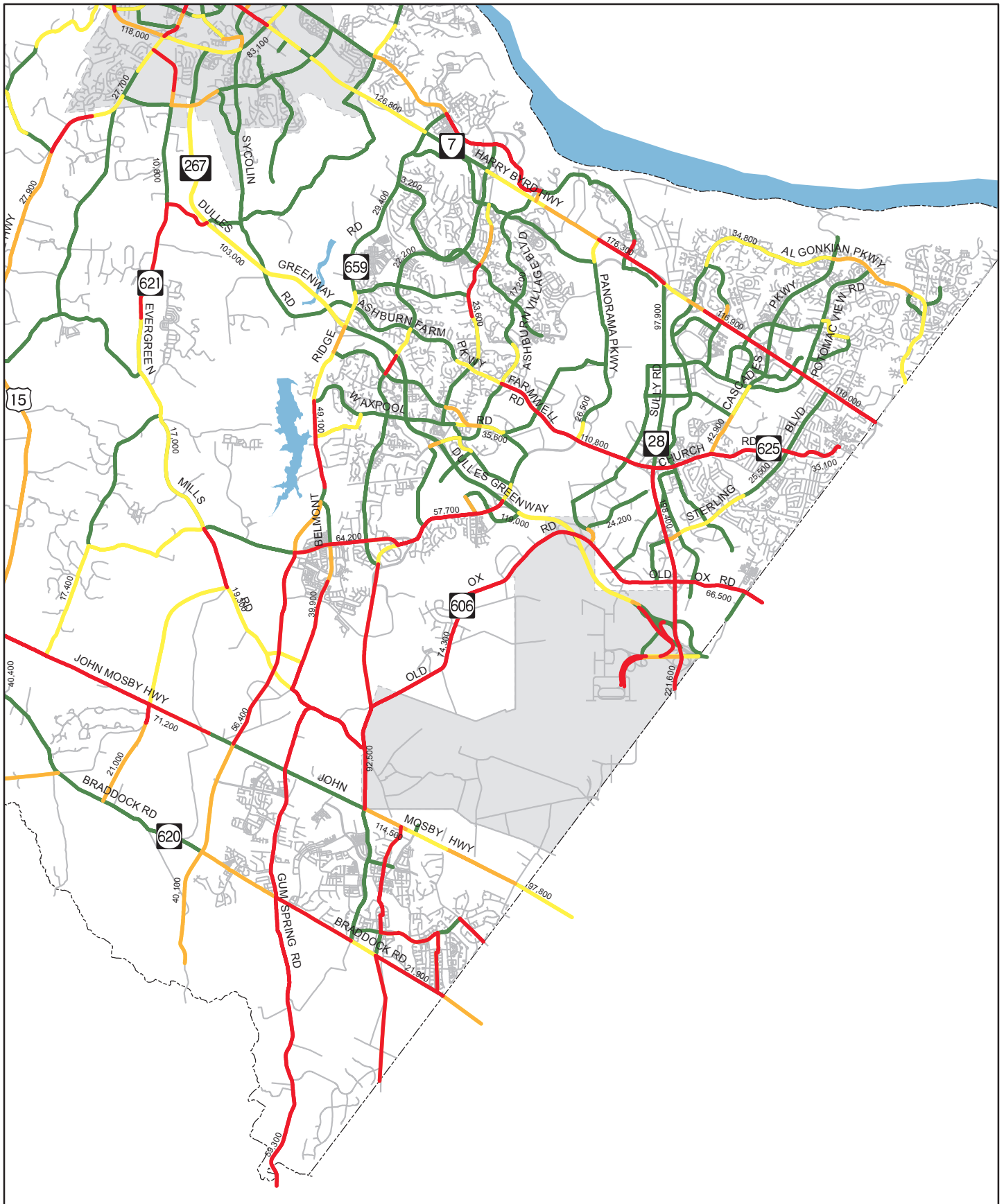
Figure A2-1c
2005 Network
Level of Service
Northwest



0 1 2
Miles

Level of Service

- A-C D E F
- Other Roads
- Towns



Loudoun County Countywide Transportation Plan Update

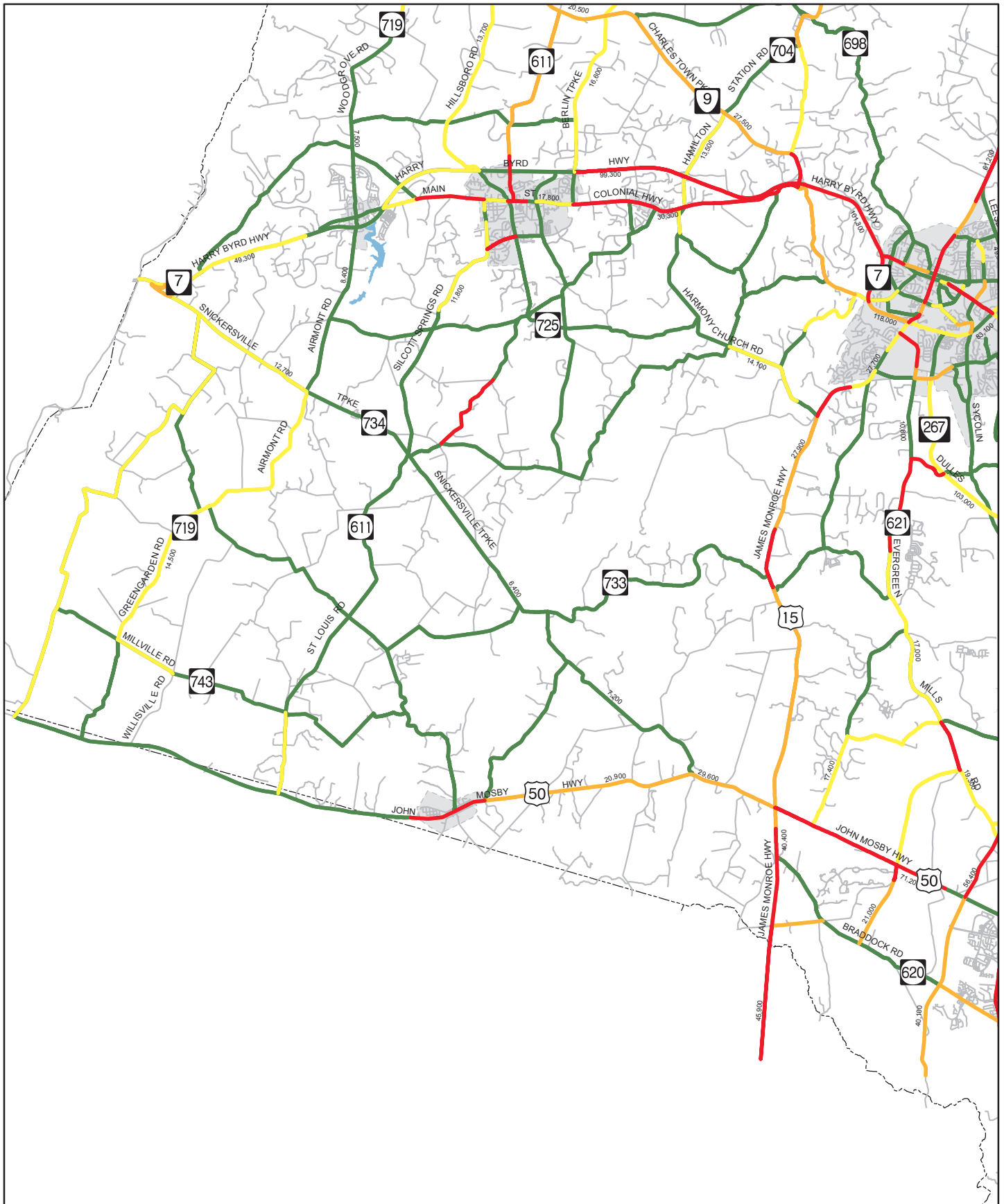
Figure A2-2a
2030 Level of Service
CLRP Network
East



0 1 2
Miles

Level of Service

A-C D E F
Other Roads
Towns



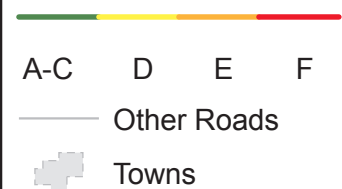
Loudoun County Countywide Transportation Plan Update

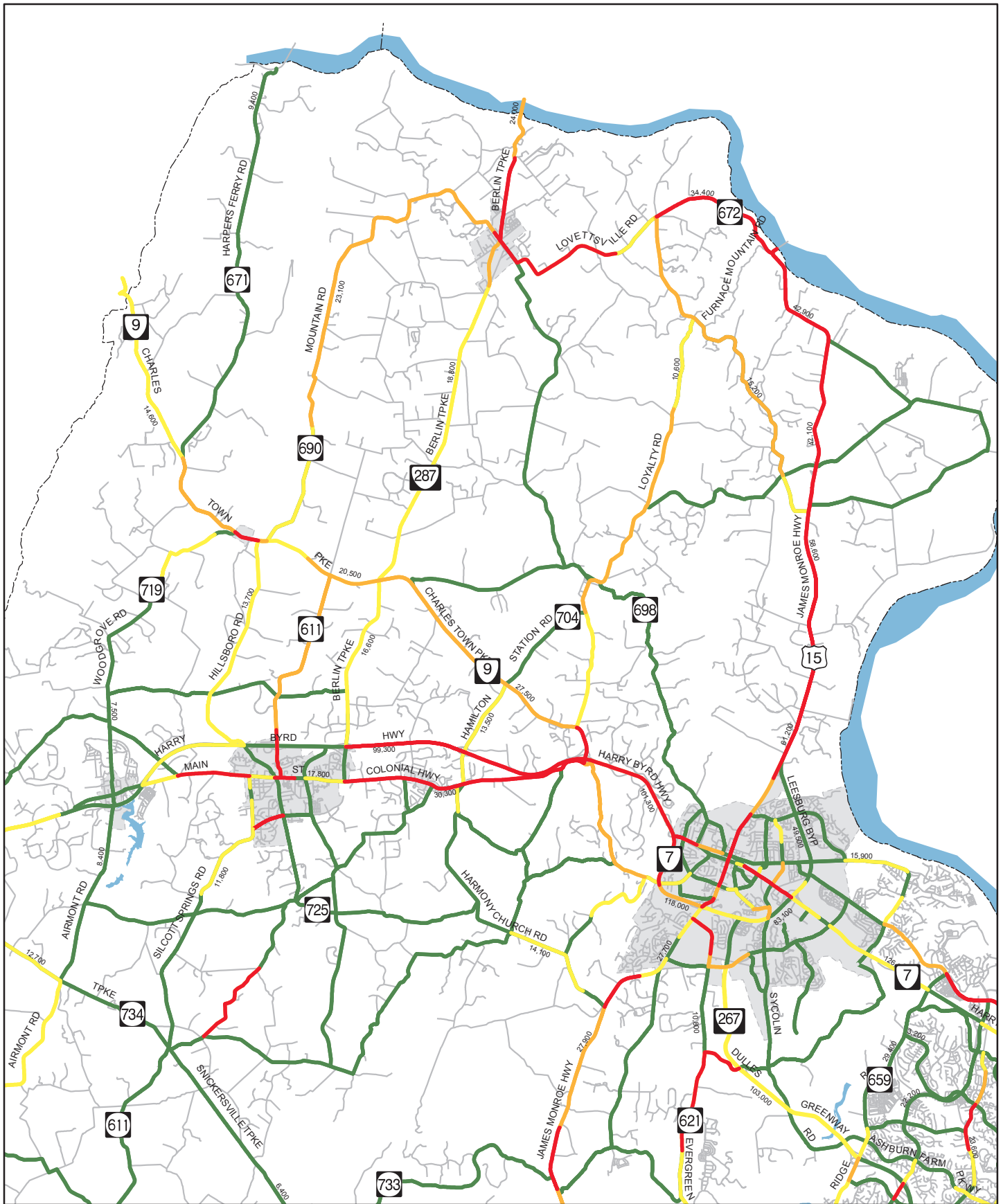
Figure A2-2b
2030 Level of Service
CLRP Network
Southwest



0 1 2
Miles

Level of Service





Loudoun County Countywide Transportation Plan Update

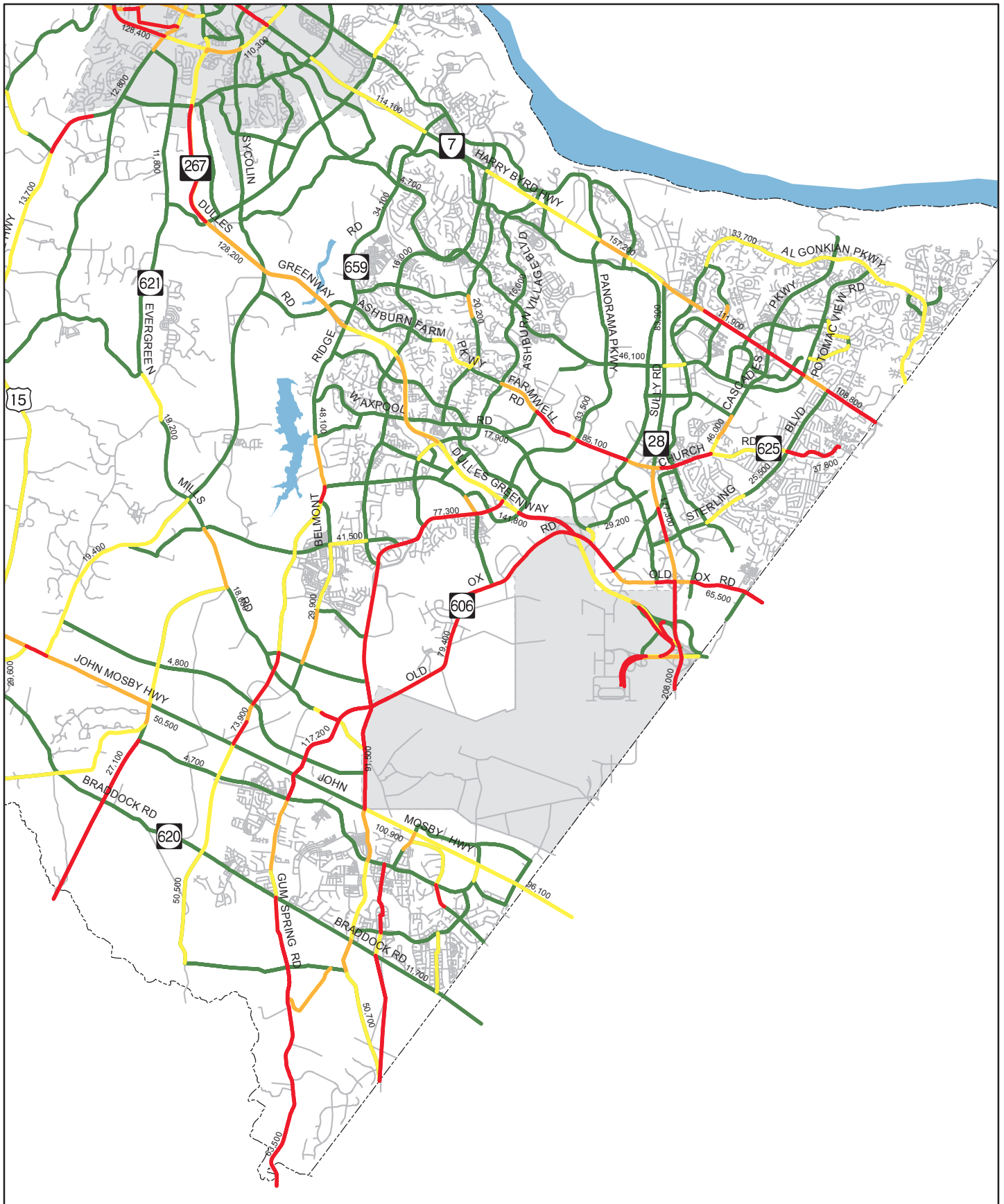
Figure A2-2c
2030 Level of Service
CLRP Network
Northwest



0 1 2
Miles

Level of Service

A-C D E F
Other Roads
Towns

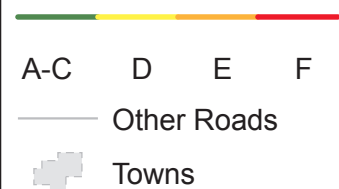


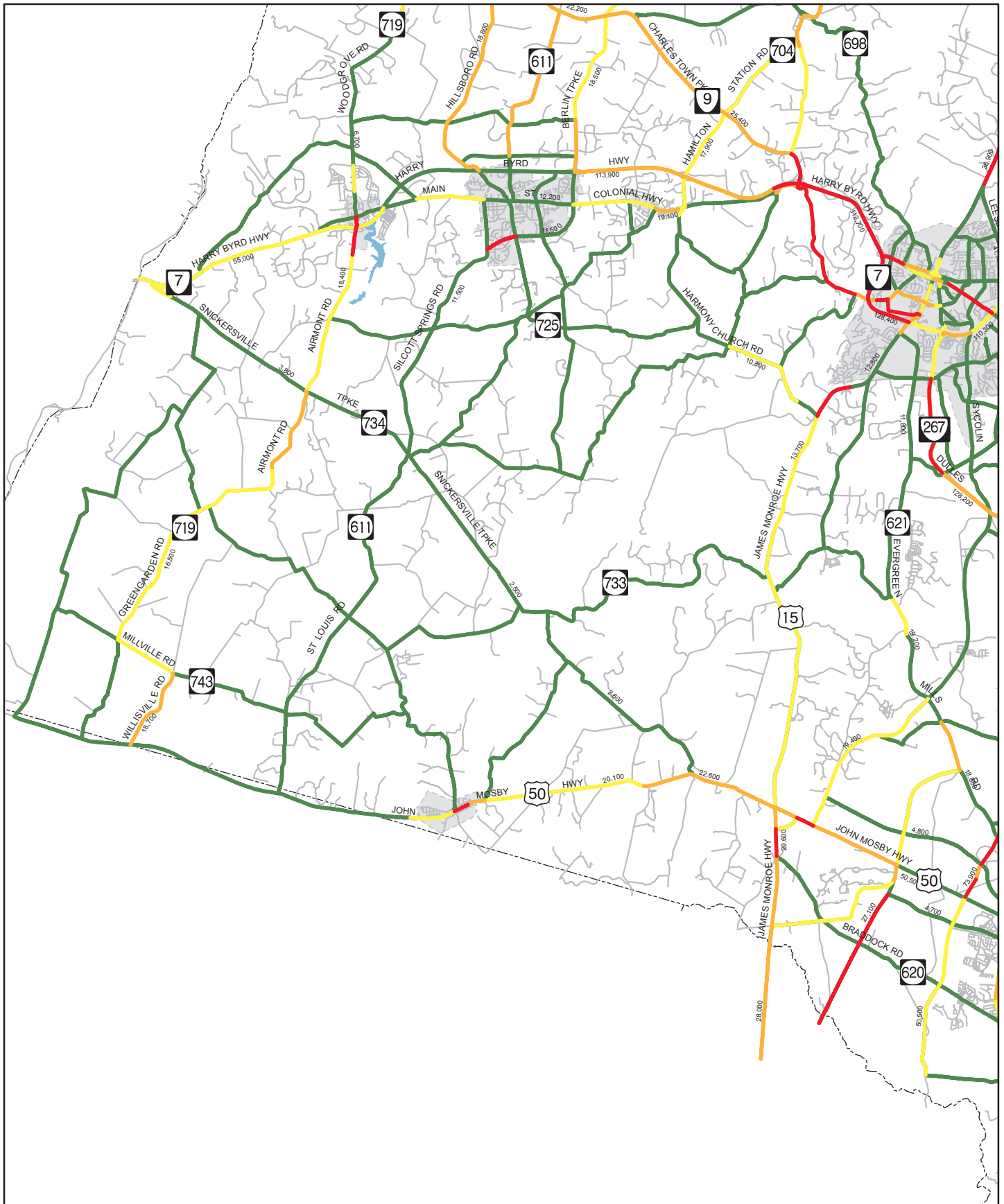
Loudoun County Countywide Transportation Plan Update

Figure A2-3a
2030 Level of Service
2001 CTP Network
East



Level of Service





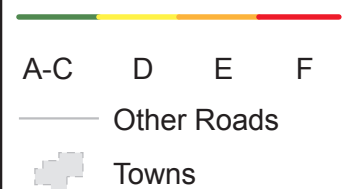
Loudoun County Countywide Transportation Plan Update

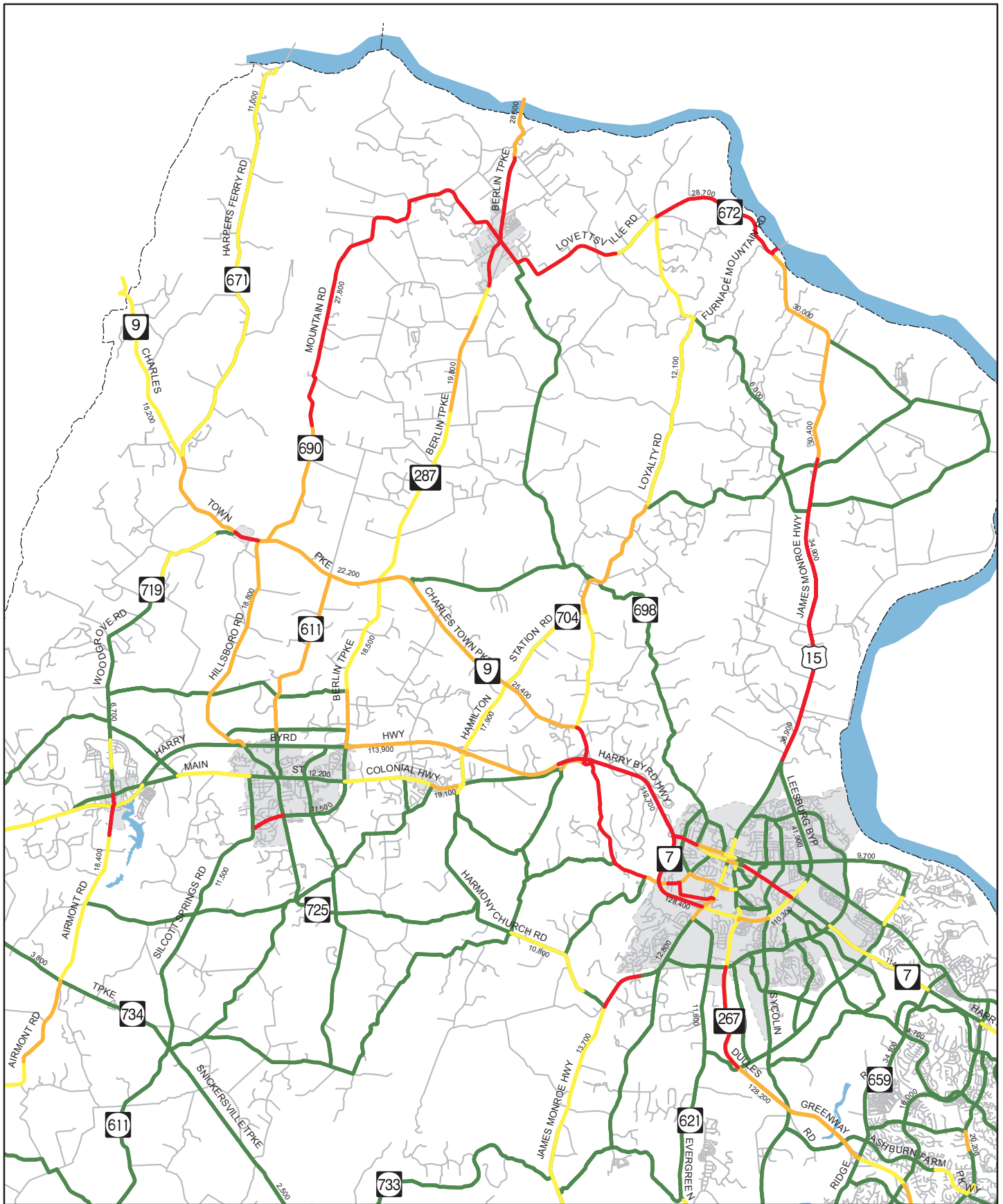
Figure A2-3b
2030 Level of Service
2001 CTP Network
Southwest



0 1 2
Miles

Level of Service





Loudoun County Countywide Transportation Plan Update

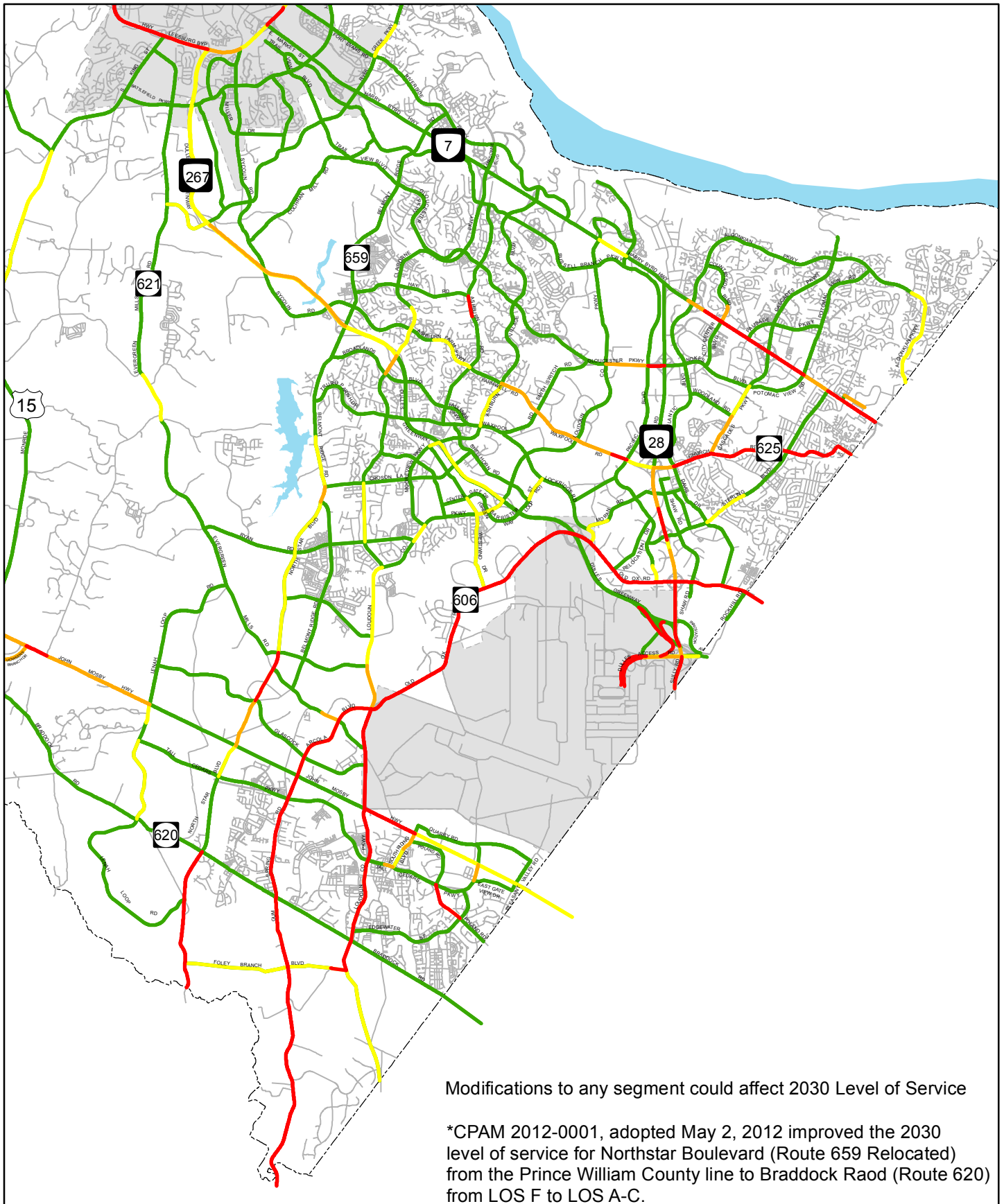
Figure A2-3c
2030 Level of Service
2001 CTP Network
Northwest



0 1 2
Miles

Level of Service

A-C D E F
Other Roads
Towns



Loudoun County Countywide Transportation Plan Update

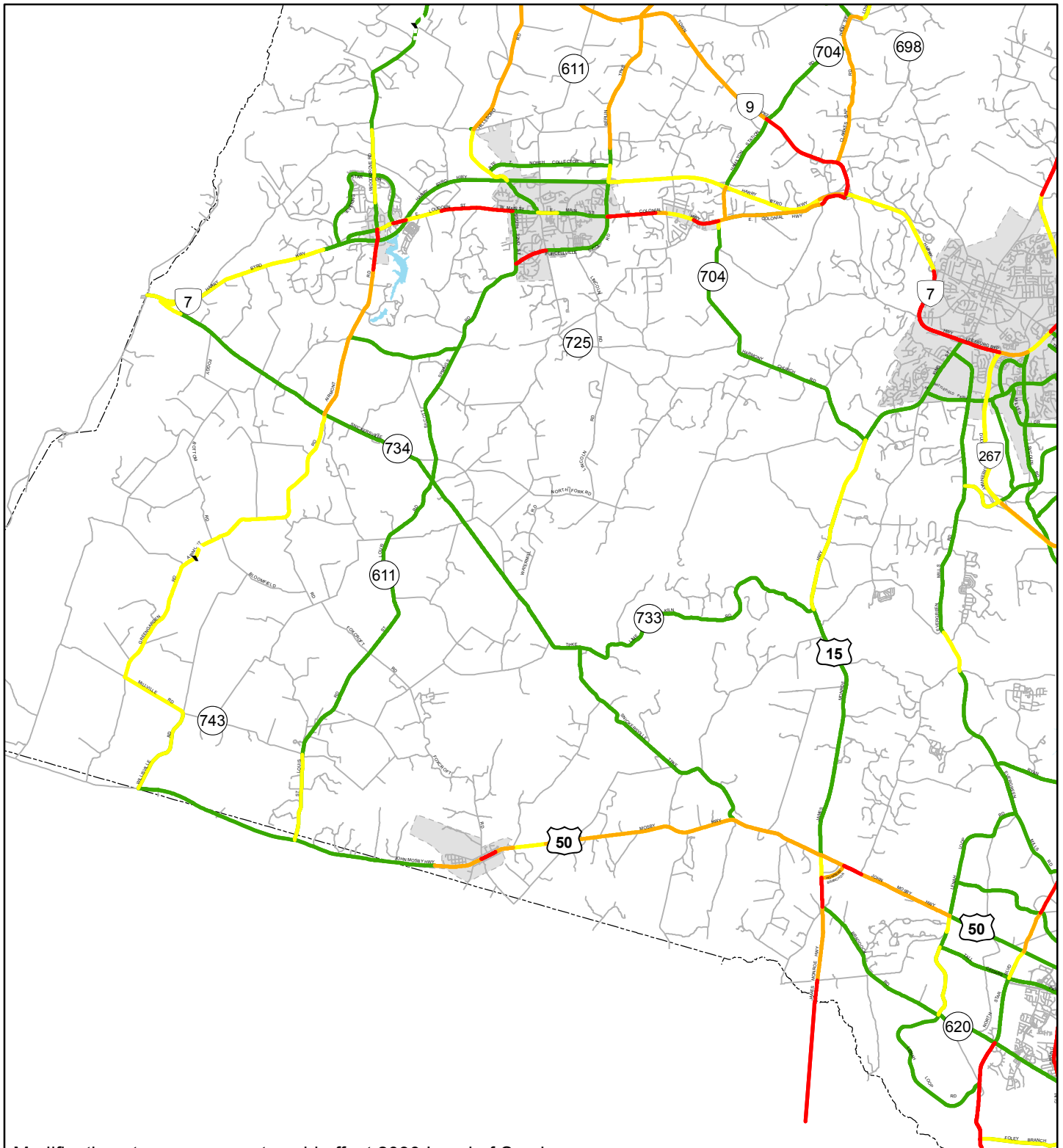
Figure A2-4a
2030 Level of Service
Revised CTP Network
East



0 1 2
Miles

Level of Service



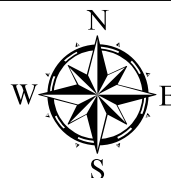


Modifications to any segment could affect 2030 Level of Service

*CPAM 2012-0001, adopted May 2, 2012 improved the 2030 level of service for Northstar Boulevard (Route 659 Relocated) from the Prince William County line to Braddock Road (Route 620) from LOS F to LOS A-C.

Loudoun County Countywide Transportation Plan Update

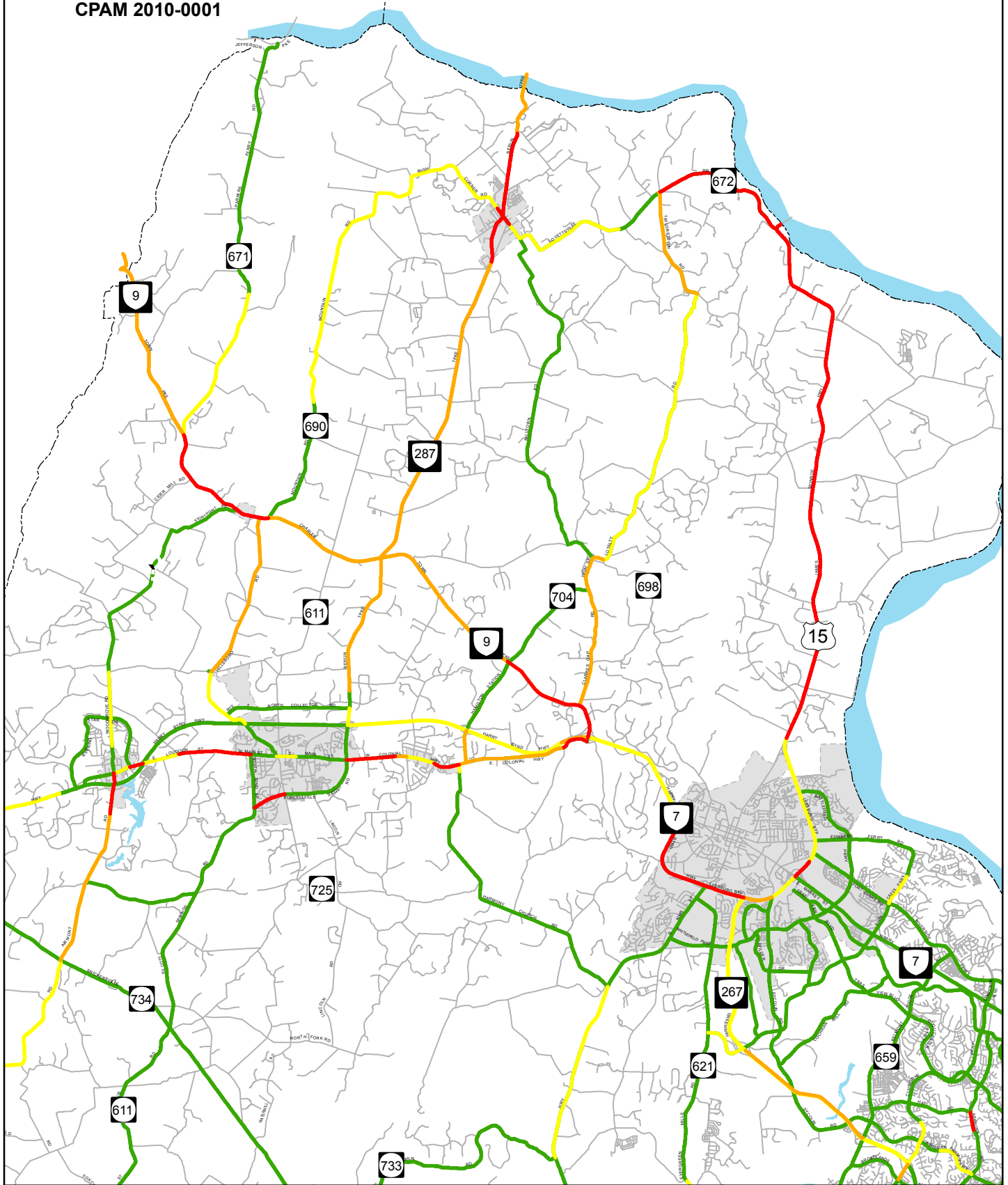
Figure A2-4b
2030 Level of Service
Revised CTP Network
Southwest



0 1 2
Miles

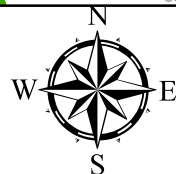
Level of Service

— A-C D E F
— Other Roads
Towns



**Loudoun County
Countywide Transportation
Plan Update**

Figure A2-4c
2030 Level of Service
Revised CTP Network
Northwest

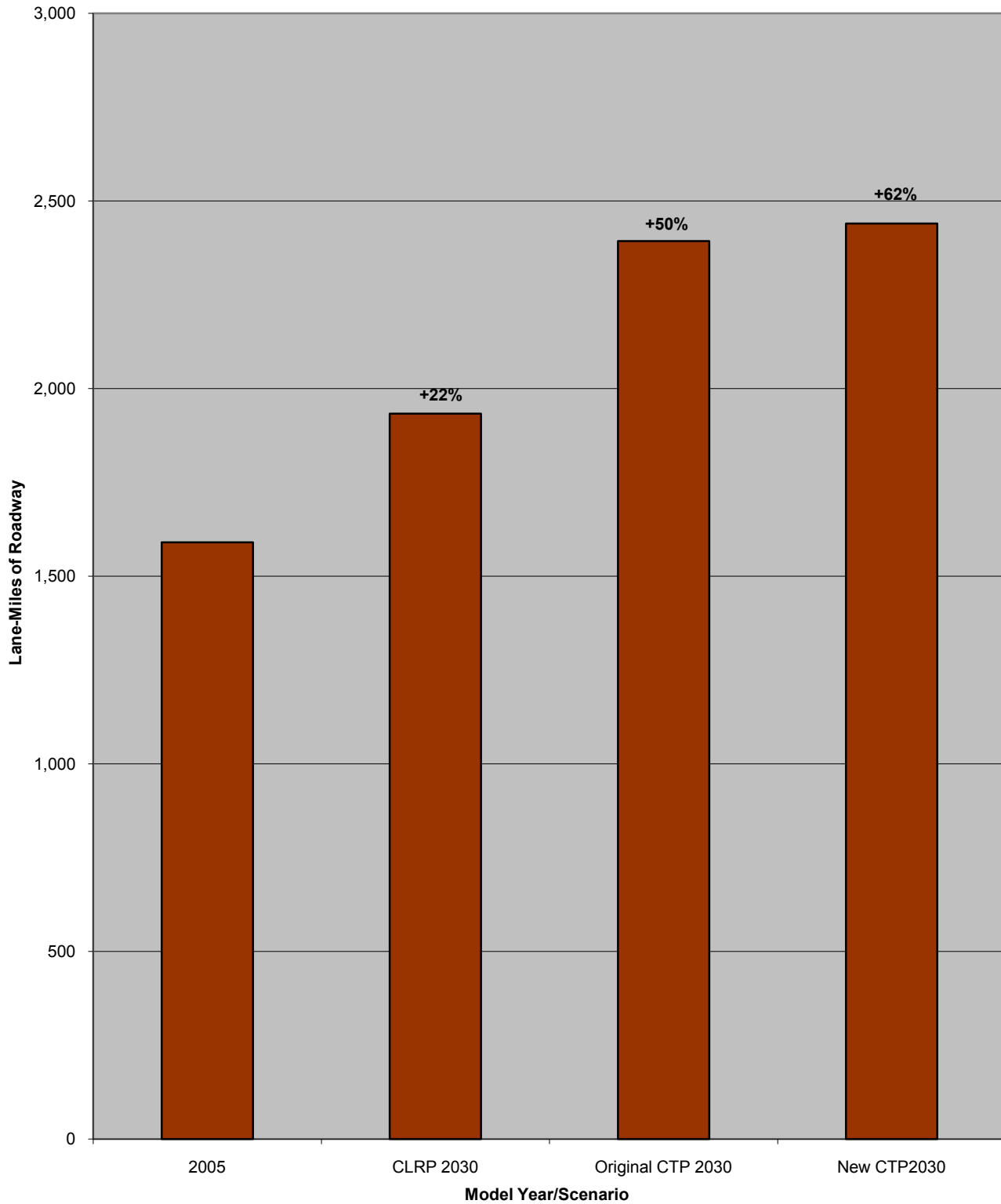


0 1 2
Miles

Level of Service

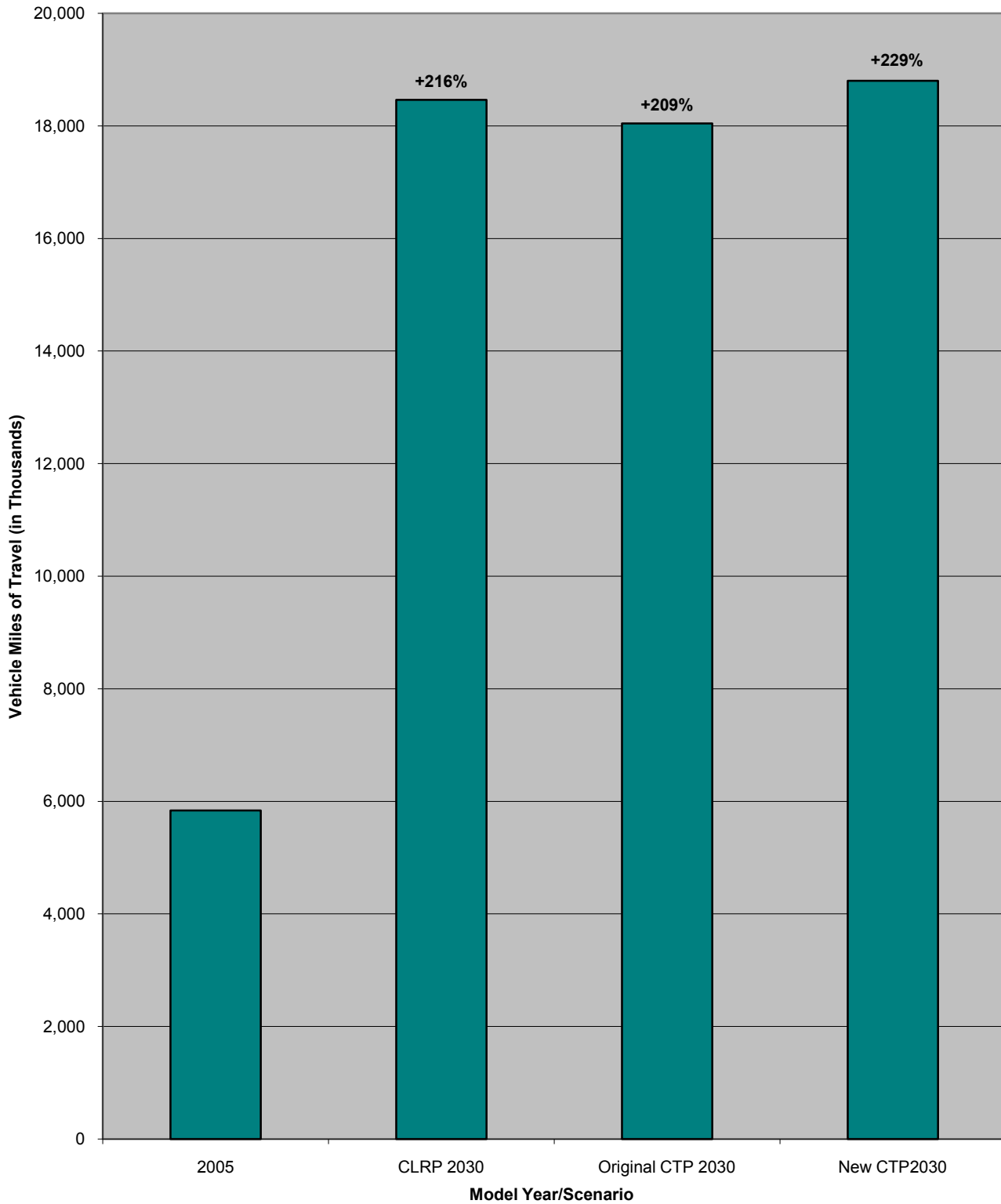


Figure A2-5: Lane-Miles of Roadway by Network



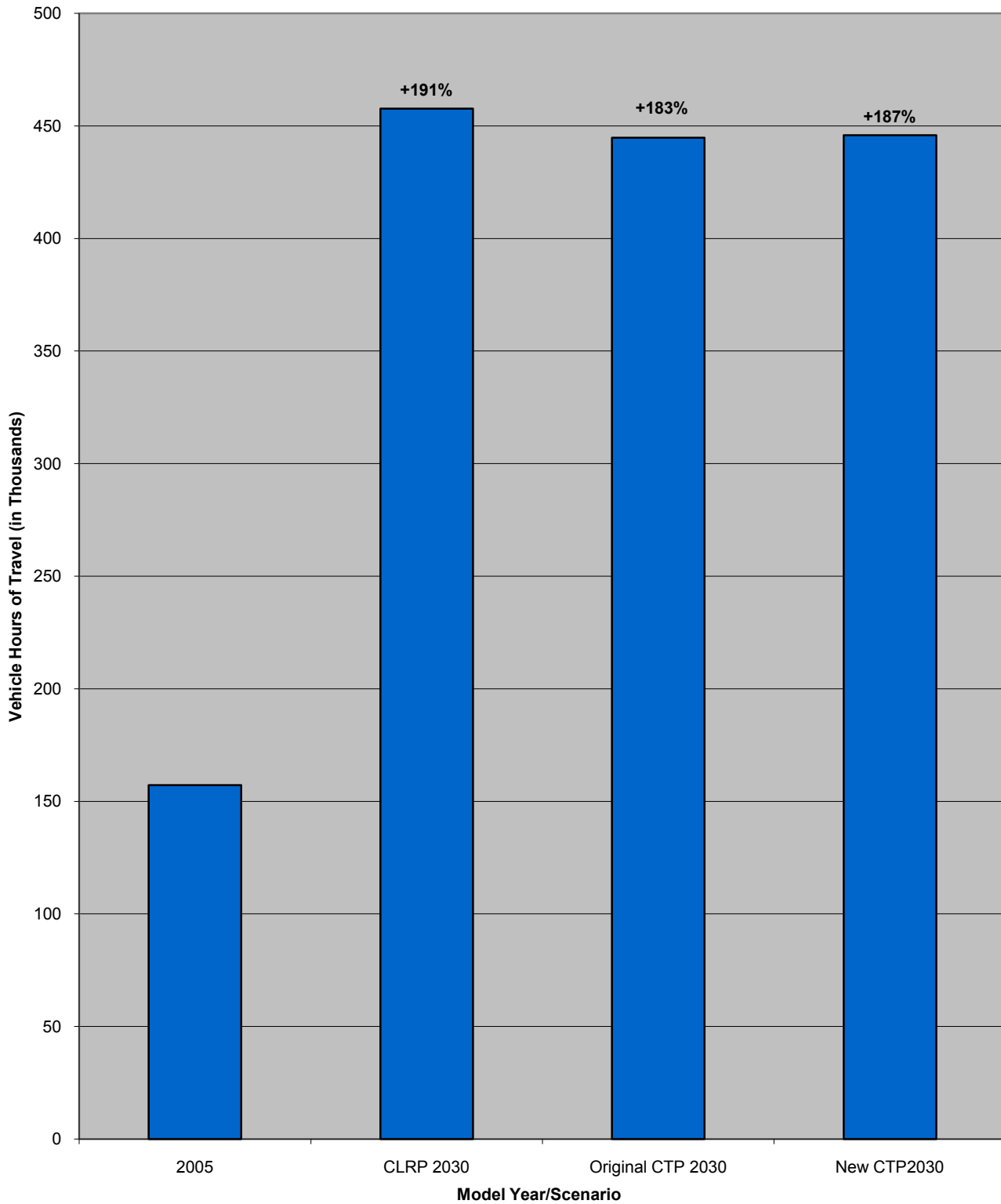
New CTP2030 data based on last model run output from September 2009. Changes to CTP since that date would not substantially change these results.

Figure A2-6: Vehicle Miles of Travel by Network



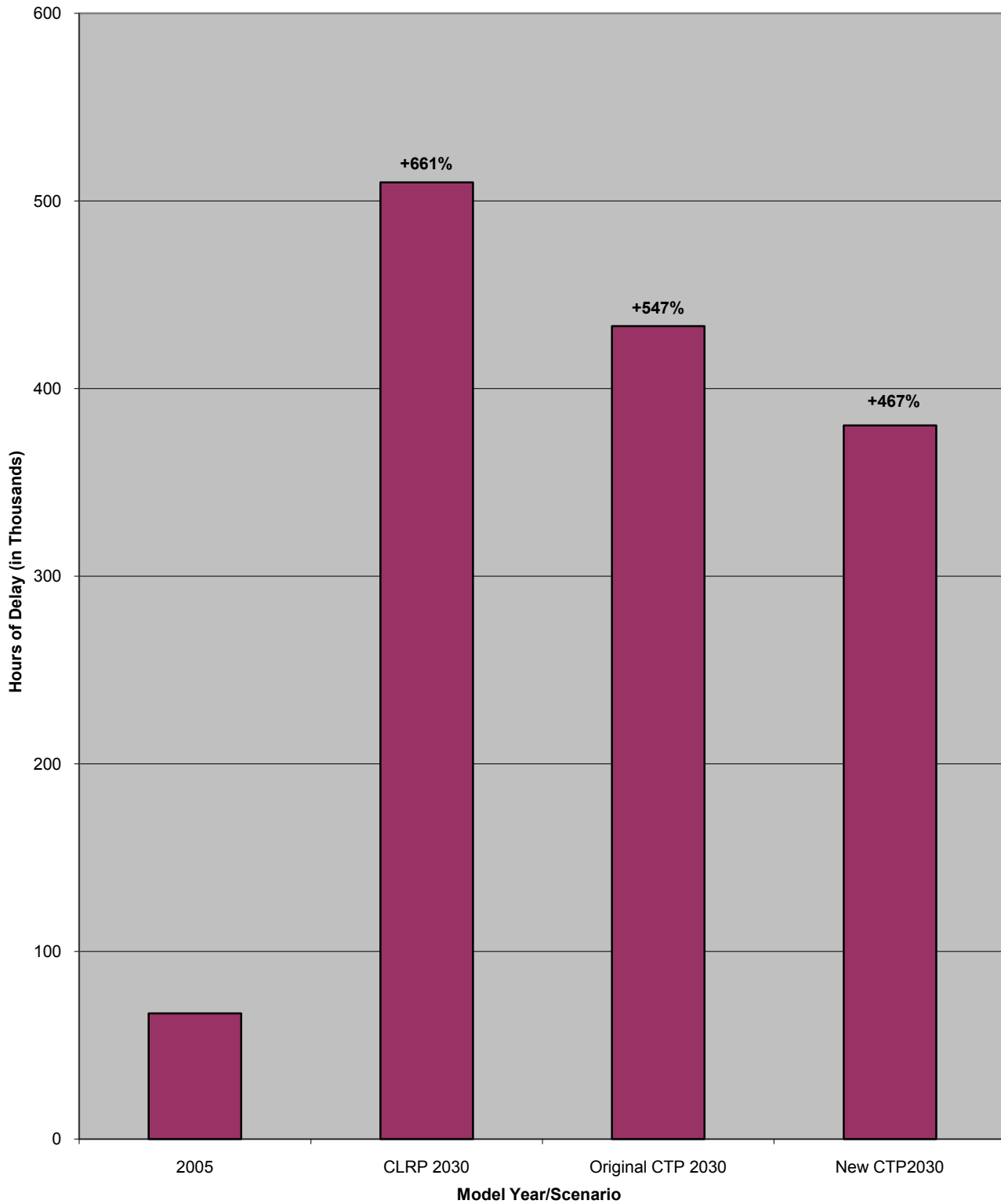
New CTP2030 data based on last model run output from September 2009. Changes to CTP since that date would not substantially change these results.

Figure A2-7: Vehicle Hours of Travel by Network



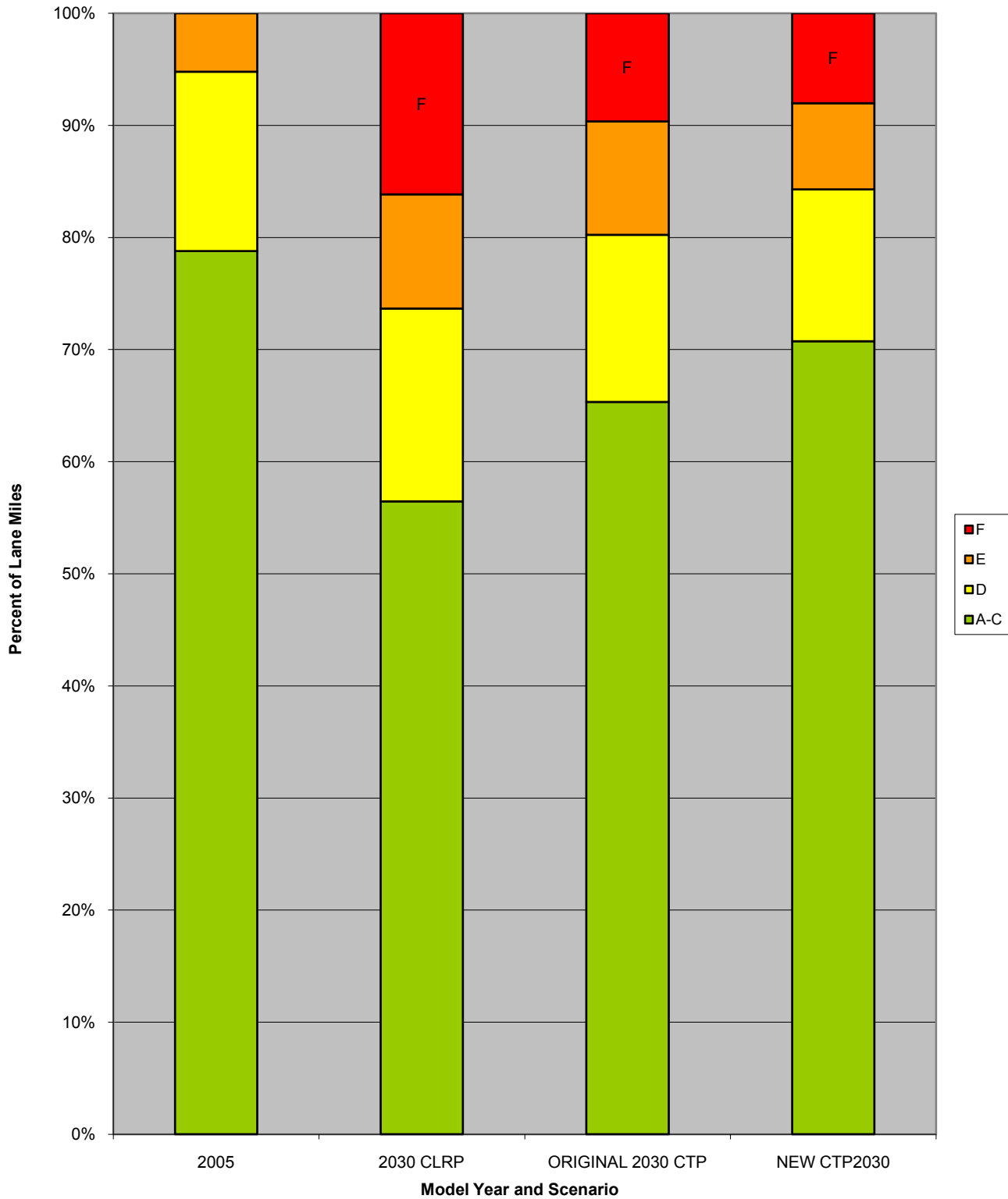
New CTP2030 data based on last model run output from September 2009. Changes to CTP since that date would not substantially change these results.

Figure A2-8: Daily Hours of Delay by Network



New CTP2030 data based on last model run output from September 2009. Changes to CTP since that date would not substantially change these results.

Figure A2-9: Percent Lane Miles by LOS



New CTP2030 data based on last model run output from September 2009. Changes to CTP since that date would not substantially change these results.



Appendix 3

Improvement Priorities

This Appendix includes transportation improvement priorities for Loudoun County. Priorities have been identified within two sections. The first section identifies the County's top priority projects. The section that follows contains a more comprehensive list of priority projects that are necessary to complete the Countywide Transportation Plan (CTP) road network including associated bicycle and pedestrian facilities.

I. Countywide Priority Project List

The County's top priority projects for implementation are identified as follows (in no certain order):

- Specific Roadways/Roadway Enhancements
 - Completion of Northstar Boulevard (from Creighton Road to Tall Cedars Parkway)
 - Completion of Waxpool Road and Ashburn Village Boulevard Intersection
 - Expansion of Belmont Ridge Road to four lanes (from Route 7 to Brambleton, including the Route 7/659 Interchange)
 - Expansion of Route 606 to four lanes (around the Dulles Airport)
 - Completion of Parallel Roads to Limited Access Highways
 - Completion of Route 7 westbound climbing lane from Leesburg to Route 9
 - Completion of Sycolin Road Overpass at Route 7/15 Bypass
 - Completion of Route 7/690 Interchange
- Completion of Missing Road Network Links
 - Connection(s) between Routes 606 and 607 (Loudoun County Parkway)
 - Tall Cedars Parkway (from Gum Spring Road to Riding Center Drive)
 - Jennings Farm Road (from Augusta Drive to Cedar Drive)
 - Gloucester Parkway (from Loudoun County Parkway to Pacific Boulevard)
 - Russell Branch Parkway (extension to Pacific Boulevard)
 - West Spine Road/Gum Spring Road
 - Croson Lane (extension to Belmont Ridge Road)
 - Claiborne Parkway (from Croson Lane to Ryan Road)
- In general, prioritize roads that enhance east-west connections above north-south connections
- Multimodal Access and Connections
 - To Metro
 - To Business Districts
 - Along Algonkian Parkway
 - Along Cascades Parkway
 - To Dulles Town Center
 - Along Atlantic Boulevard
 - Between Communities
 - Along future Moran Road Bridge
 - From eastern Loudoun to Western Fairfax (especially along Algonkian Parkway)
 - Along Route 7 from Dranesville to Potomac View



-
- From the W&OD Trail to Job Centers and Communities
 - From Communities to Schools
 - Park and Ride Lots
 - At Dulles North
 - Along Route 15 North of Leesburg
 - At University Center/Lansdowne
 - In Sterling
 - Identification and Construction of Bus Rapid Transit (BRT) Stations
 - Bicycle and Pedestrian Connections, Safety Improvements and Programs
 - Safety Improvements in Established Communities
 - Route 7 Crossings from Fairfax County line to Leesburg
 - Connections to W&OD Trail from adjacent and intersecting roadways
 - Trails
 - Connections to Franklin Park from Purcellville and Round Hill
 - Shared-use trail along Business Route 7 from Hamilton to Harmony Intermediate School
 - Connector between W&OD Trail in Leesburg to Whites Ferry
 - Shared-use trail between Algonkian Regional Park and Claude Moore Park
 - Connections to W&OD Trail from existing Suburban Community pathways
 - Sterling Park Open Space Trail System
 - Multi-use trail along Berlin Turnpike through Lovettsville connecting to W&OD and C&O Trail
 - Networks of sidewalks and multi-use trails in each of the Towns
 - Completion of a shared-use trail along the entire length of the Loudoun County Parkway

II. Projects for CTP Build-Out

Within this section, a more comprehensive list of projects to complete the CTP network has been identified. These projects have been separated into three priorities with estimated time frames for implementation. The three categories of prioritization are as follows:

- Near-Term Project (2010-2014)
- Intermediate Project (2015-2020)
- Long-Term Project (2021-2030)

The concept of establishing near-term, intermediate, and long-term priorities is consistent with the prioritization process of the TransAction 2030 Regional Transportation Plan as developed by the Northern Virginia Transportation Authority (NVTA). However, this Appendix includes priorities for many more Loudoun County road projects than were included in the TransAction 2030 Plan.

Priorities are directly linked to the urgency of the need for the improvement. Near-Term priority is assigned to projects for those roads which are already at Level of Service (LOS) “E” or “F”. The financial resources to construct these improvements must already be allocated to the project. For private sector proffers there must be a high level of certainty that the pace of the project’s development will allow the construction of the road improvement in the near-term time frame. Within the category of near-term priority improvements, each project is further ranked based on existing or forecasted traffic volumes and levels-of-service which most clearly signal the need for each improvement. In the intermediate and long term



categories, no priority ranking for individual projects is made within the broader priority category. It should be noted that should private sector development occur along intermediate- and long-term road segments in the near-term, the segments would be re-classified as near-term priority projects and the expectation would be that they would be constructed through private sector proffer or Community Development Authority (CDA).

This Appendix also includes cost estimates for major projects. The project cost estimates were developed using VDOT Transportation and Mobility Planning Division Statewide Planning Cost Estimates for the NOVA Division. Estimated costs are in 2008 dollars. The cost estimates provided are preliminary planning-level estimates based on general project information such as typical section and length; more detailed cost estimates will be developed for each project in the design phase. The planning cost estimates are also subject to change upon further review. Interchange cost estimates are the most current available to OTS and subject to change based on future engineering. For projects where VDOT project cost estimates are available, these estimates are used. Sources for this required funding are also identified where known including already committed resources. This is done with the highest level of certainty for high priority projects.

Primary and Secondary Road projects are included together at the three priority levels. This Appendix is not inclusive of all roads in Appendix One and on the CTP maps. Any CTP Map/Appendix One road not discussed in this Appendix should be considered a long-term priority project. Like the TransAction 2030 Plan, this ranking focuses on arterial and major collector roads. In major corridors, such as Routes 7, 28 and 50, road improvement projects are split between priority categories as appropriate depending on traffic forecasts and identified funding. Finally, it should be noted that all projects will include bicycle and pedestrian accommodations consistent with Appendix 6.

A. Route 28 Corridor

Route 28 interchanges have previously been constructed through the PPTA process at Church Road (Route 625), Sterling Boulevard (Route 846), Old Ox Road (Route 606) and Nokes Boulevard.

1. Near-Term Projects

Pacific Boulevard: Auto World Way (South of the W&OD) to Severn Way West. Construct a four-lane undivided road including an overpass of the W&OD. Estimated Cost: \$25,000,000

Atlantic Boulevard: Magnolia Road to Church Road, Route 625. Construct a four-lane median divided road including an overpass of the W&OD. Estimated Cost: \$24,000,000

2. Intermediate Projects

Pacific Boulevard: Gloucester Parkway to Russell Branch Parkway/Broad Run. Construct a four-lane undivided road. Estimated Cost: \$16,500,000

Glenn Drive: Current Northern Terminus to Route 775. Construct a four-lane undivided road. Estimated Cost: \$2,700,000

Shaw Road: Sterling Boulevard – Cedar Green Road. Construct a four-lane undivided road. Estimated Cost: \$6,400,000

Completion of the Route 28/Innovation Avenue Interchange: Estimated cost depends on approval of a design concept (\$25,000,000)

Davis Drive: Yeager Court to Route 606. Construct a four-lane undivided road. Estimated Cost: \$6,400,000



Pacific Boulevard: Relocation Drive to Dresden Street. Construct a four-lane undivided road. Estimated Cost: \$20,000,000

3. Long-Term Projects

Route 28. Expand from six to eight limited access lanes. Estimated Cost: \$21,000,000

B. Route 7 East Corridor

1. Near-Term Projects

Route 7: Fairfax County line to Route 28. Spot improvements including turn lanes, raised traffic islands, acceleration lanes, signal installations and modifications. Estimated Cost: \$3,065,000

Route 7/Loudoun County Parkway Interchange: Single Point Urban Diamond Design. Estimated Cost: \$32,000,000. Funded by Loudoun County Road Bonds.

Route 7/Ashburn Village Boulevard Parkway Interchange: Diamond Design. Estimated Cost: \$20,000,000

Battlefield Parkway: Sycolin Road to Route 7. Construct four-lane median divided road. Estimated Cost: \$25,000,000

2. Intermediate Projects

Route 7/Belmont Ridge Road, Route 659 Interchange: Interchange format TBD. Estimated Cost: \$45,000,000

Riverside Parkway: Hughes Medical Institute to University Center (George Washington Parkway). Construct four-lane median divided road. Estimated Cost: \$10,100,000

Russell Branch Parkway: Fill-in existing gaps between Route 641 and Broad Run. Construct four-lane median divided road. Estimated Cost: \$16,000,000

Crosstrail Boulevard: Greenway to Russell Branch Parkway. Construct four-lane median divided road. Estimated Cost: [not yet available]

Battlefield Parkway/Route 7 Interchange: Single Point Urban Diamond Design. Estimated Cost: \$32,000,000

Gloucester Parkway: Loudoun County Parkway to Pacific Boulevard. Construct 4-lane median divided road. Estimated Cost: \$32,000,000.

Battlefield Parkway: Evergreen Mills Road to Route 15. Construct 4-lane median divided road. Estimated Cost: [not yet available]

3. Long-Term Projects

Route 7: Route 28 to Route 15 Bypass. Expand to eight-lanes. Estimated Cost: \$26,000,000. Note: Costs could be higher if lanes are operated as HOV.

Riverside Parkway: Belmont Ridge Road to Loudoun County Parkway. Expand to six lanes. Estimated Cost: \$9,000,000

Russell Branch Parkway: Route 659 to Riverside Parkway. Expand to six lanes. Estimated Cost: \$12,000,000

Battlefield Parkway: Route 15 to Route 7. Expand to six lanes. Estimated Cost: \$10,500,000



C. Route 7 West Corridor

1. Near-Term Projects

None.

2. Intermediate Projects

Route 15 Leesburg Bypass: Route 7 West to East Market Street. Widen to six lanes. Estimated Cost: \$30,000,000

Route 7: Route 15 Bypass to Route 9. Widen to six lanes. Estimated Cost: [not yet available]

Route 7/Route 690 Interchange: Estimated Cost: \$20,000,000

Route 15 Bypass/South King Street Interchange: Improve and expand existing interchange. Estimated Cost: \$15,000,000

Route 7 Truck Climbing Lane: West Market Street to Route 9. Estimated Cost: \$20,000,000

Sycolin Road Overpass of Route 15 Bypass: Estimated Cost: \$15,000,000

3. Long-Term Projects

Route 7: Route 9 to Route 690. Widen to six lanes. Estimated Cost: \$21,000,000

Route 7/White Gate Interchange: Estimated Cost: \$20,000,000.

D. Greenway Corridor

1. Near-Term Projects

Waxpool Road, Route 625: Claiborne Parkway to Faulkner Parkway. Expand to four-lane median divided road. Estimated Cost: [not yet available]

Sycolin Road: Route 15 Bypass to Crosstrail Boulevard. Expand to four-lane undivided road. Estimated Cost: \$14,000,000

2. Intermediate Projects

Route 789 Extension: Waxpool Road to Moran Road (Route 606 Metrorail Station): Construct four-lane median divided road including a new bridge over Broad Run. Estimated Cost: \$21,000,000

Construct Transit Connector Road: Shellhorn Road to Moorefield Boulevard. Road to serve Ashburn Metrorail Station. Estimated Cost: \$15,000,000

Croson Lane: Route 659 to Transit Connector Road. Four-lane median divided road. Estimated Cost: \$17,000,000

East-West Connector Road: Construct four-lane road, divided and undivided sections between Route 659 and Transit Connector Road. Estimated Cost: \$10,000,000

Westwind Drive: Loudoun County Parkway to Route 606. Construct four-lane median divided road including a new bridge over Broad Run. Estimated Cost: \$12,000,000

3. Long-Term Projects

Greenway: Claiborne Parkway to Route 15 Bypass. Widen to eight lanes. Estimated Cost: N/A

Sycolin Road and Greenway Interchange: Estimated Cost: \$30,000,000



E. Route 50 Corridor

1. Near-Term Projects

Route 50: Fairfax County line to Poland Road, Route 642. Expand to six lanes. Estimated Cost (for entire project including portion in Fairfax County): \$75,000,000.

Route 50: Lenah to Fauquier County line. Construct traffic calming improvements including roundabouts. Estimated Cost: \$55,000,000

Route 50: Loudoun Parkway to Route 659. Expand to six lanes. Estimated Cost: [not yet available]

Tall Cedars Parkway: Poland Road to Route 50. Construct four-lane median divided. Estimated Cost: \$10,000,000

Dulles South Parkway: Loudoun County Parkway to Route 606 Extended. Construct four-lane median divided road. Estimated Cost: \$10,000,000

2. Intermediate Projects

Route 606 Extended: Loudoun County Parkway to Route 50. Construct a four-lane median divided road. Estimated Cost: \$16,000,000

Route 50: Route 606 Extended to North Star Boulevard. Expand to six lanes. Estimated Cost: \$4,000,000

Tall Cedars Parkway: Route 659 to Pinebrook Road. Construct four-lane median divided road. Estimated Cost: \$7,000,000

Tall Cedars Parkway: Stone Ridge to North Star Boulevard. Construct a four-lane median divided road. Estimated Cost: \$5,000,000

Dulles South Parkway: Route 606 Extended to North Star Boulevard. Construct a four-lane median divided road. Estimated Cost: \$14,000,000

Loudoun County Parkway and Route 50 Interchange: Estimated Cost: \$65,000,000

Route 606 Extended and Route 50 Interchange: Interchange format TBD. Estimated Cost: \$32,000,000

3. Long-Term Projects

Route 50 and Northstar Boulevard Interchange: Interchange format TBD. Estimated Cost: \$50,000,000

Route 50 and Tall Cedars Parkway Interchange: Interchange format TBD. Estimated Cost: \$32,000,000

Route 50 and South Riding Boulevard Interchange: Interchange format TBD. Estimated Cost: [not yet available]

Dulles South Boulevard: Loudoun County Parkway to Northstar Boulevard. Estimated Cost: \$7,000,000

F. Route 606 Corridor

1. Near-Term Projects

Route 606: Dulles Greenway to Route 621. Expand to four lanes. Estimated Cost: \$40,000,000

Route 606 Extended: Loudoun County Parkway to Route 50. Construct a four-lane median divided road. Estimated Cost: \$16,000,000

Route 606 Interchange Study: Study possible locations for interchanges on Route 606 from Route 28 to Route 50, including possible locations for parallel roads.



2. Intermediate Projects

Route 606: Dulles Greenway to Route 50. Expand from four lanes to six lanes. Estimated Cost: \$18,000,000

3. Long-Term Projects

Route 606: Route 28 to Route 50. Expand to eight lanes. Estimated Cost: \$22,000,000

G. Loudoun County Parkway Corridor

1. Near-Term Projects

Loudoun County Parkway: From Creighton Road to Route 606. Construct a four-lane median divided road including a bridge over Broad Run. Estimated Cost: \$27,000,000

2. Intermediate Projects

Loudoun County Parkway: From Route 7 to Waxpool Road. Expand from four to six lanes. Estimated Cost: \$14,000,000

Loudoun County Parkway: From Dulles Greenway to Ryan Road. Expand from four to six lanes. Estimated Cost: \$8,000,000

3. Long-Term Projects

Loudoun County Parkway: From Ryan Road to Braddock Road. Expand to six-lane median divided. Estimated Cost: \$24,000,000

Ashburn Village Boulevard: From Route 7 to Dulles Greenway. Expand to six-lane median divided. Estimated Cost: \$18,000,000

Loudoun County Parkway (formerly designated as Tri-County Parkway): From Braddock Road to Fairfax County line. Construct six-lane median divided road. Estimated Cost: \$38,000,000

H. Route 659 Corridor (Route 659 and Northstar Blvd)

1. Near-Term Projects

Route 659 (Belmont Ridge Road): Route 7 to Dulles Greenway. Expand to four-lane median divided road. Estimated Cost: \$91,000,000

Route 659 and Route 606 Extended: Braddock Road to Route 50. Expand to four-lane median divided. Estimated Cost: \$19,000,000

Route 659: Dulles Greenway to Northstar Boulevard. Expand to a four-lane median divided road. Estimated cost: [not yet available]

2. Intermediate Projects

Route 659 (Gum Springs Road): Braddock Road to Prince William County line. Expand to four-lane median divided road. Estimated Cost: \$40,000,000

Northstar Boulevard: Route 50 to Prince William County line. Construct four-lane median divided road. Estimated Cost: \$43,000,000

3. Long-Term Projects

Route 659 (Belmont Ridge Road): Route 645 (Croson Lane) to Northstar Boulevard. Expand from four to six lanes median divided. Estimated Cost: [not yet available]



Northstar Boulevard: Route 659 to Braddock Road. Expand from four to six lanes median divided. Estimated Cost: 30,000,000

I. Route 15 Corridor

1. Near-Term Projects

Route 15 Lucketts Area: Implement safety intersection and traffic calming improvements, road to remain two lanes. Estimated Cost: \$13,000,000

2. Intermediate Projects

Route 15: Harmony Church Road to Prince William County line. Construct safety improvements, widen lanes to twelve feet, intersection improvements, traffic calming where appropriate. Estimated Cost: \$30,000,000

Route 15 Bypass/Battlefield Parkway Interchange: Single Point Urban Diamond Format. Estimated Cost: \$32,000,000

Route 15: Evergreen Mills Road to Harmony Church Road. Expand to four-lane median divided section. Estimated Cost: \$23,000,000

3. Long-Term Projects

Route 15 Bypass/Edwards Ferry Road Interchange: Estimated Cost: \$25,000,000

J. Route 9 Corridor

1. Near-Term Projects

None.

2. Intermediate Projects

Route 9: Provide traffic calming measures within the Town of Hillsboro. Estimated Cost: \$13,000,000

3. Long-Term Projects

Route 9: Construct safety improvements, widen lanes to twelve feet, intersection improvements, traffic calming where appropriate. Estimated Cost: [not yet available]



Appendix 4

Transit Route Profiles

I. Conceptual Route Profiles

This Appendix includes a conceptual route profile page for each new or modified future transit route, along with performance data for existing routes. These route recommendations are general and indicative of projected demand. Each route would be examined and refined further prior to implementation.

Development of new routes is subject to a three step planning process:




- First, an assessment is completed based on market characteristics and projected demand in a long range plan with a 20-year horizon. Long range plans, such as this CTP effort, are updated every five to ten years.
- Second, more detailed operational analysis and service planning of proposed routes within a five to six year span is conducted in a Transit Development Plan (TDP). TDPs are evaluated and brought up to date every three to four years.
- Third, as proposed routes are prioritized and funding is identified, detailed development of route location, stops, schedule and operational planning occurs. This phase includes public outreach to the potential riders of the route. The development and refinement of routes is an ongoing process.

Existing, modified and planned routes were evaluated based on three performance factors for the three phases of this plan (Phases I. current scenario; Phase II. Metrorail complete to Wiehle Avenue; and Phase III. Metrorail complete to Route 772 in Loudoun County). This performance data is included on the planned conceptual route profiles and incorporated in the evaluation of the existing routes:

- **Projected daily ridership** was derived from modeling based on a user benefit calculation which considers both cost and time of riding transit versus cost and travel time for single occupancy vehicle.
- **Passengers per hour** was determined by dividing total daily ridership by hours of daily operation.
- **Net cost per passenger** was established by dividing the projected cost of the route by the projected daily ridership, net of any fare revenue.

The pages that follow show conceptual route profiles of the recommended new and modified routes, including a route graphic, description, performance data, advantages, challenges, and notes on variation or implementation of the base recommendation.

The park and ride lots in the route graphics are as follows:

-  Purple: Existing lot
-  Blue: Planned Lot (location identified)
-  Tan: Proposed lot (location not yet identified)

Note: Modeling of commuter bus ridership is highly sensitive to travel times and was not constrained by the number of park and ride spaces in commuter lots. As a result, projections within a corridor having multiple lots may appear high in one location and low in another (ex: Purcellville and Leesburg along Route 7 or Ashburn North and Dulles North along Route 28). In reality, ridership distribution among lots would likely be more balanced and/or subject to rider preferences and habits that may not relate to travel times.



Transit Recommendations Profile

Ashburn North

Type: Commuter Bus Service

Implementation Phase: Phase I

Service Area Population: 23,517 w/in 5 mi. of proposed stations

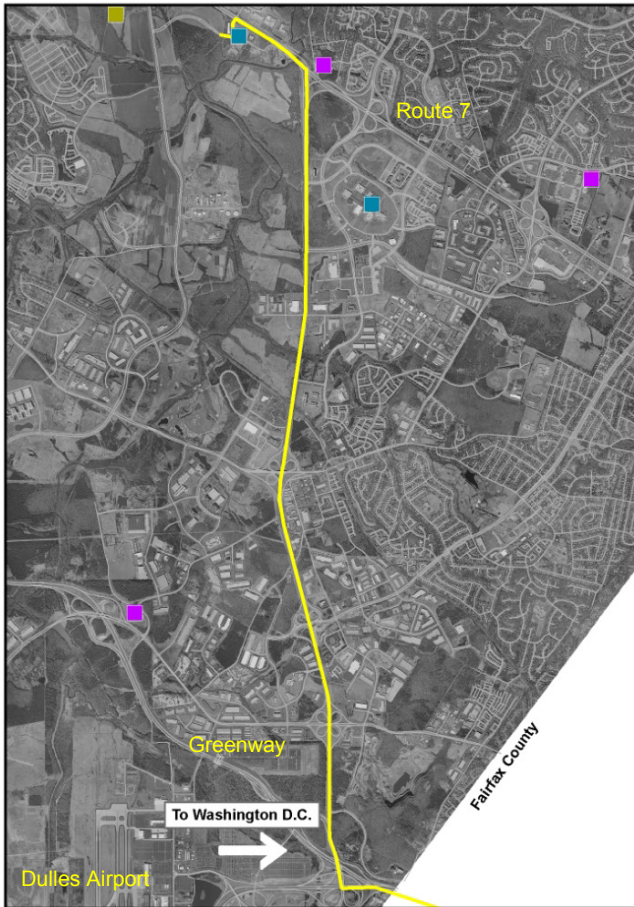
Est. Phase I Annual Operating Cost: \$1,565,000



Conceptual Routes/
Park and Ride Lots

Proposed Service Locator

| PERFORMANCE DATA | Phase I | Phase II | Phase III* |
|---------------------------|----------|----------|------------|
| Projected daily ridership | 940 | 420 | 320 |
| Passengers per hour | 33.4 | 18.1 | 20.7 |
| Net cost per passenger | (\$0.41) | \$5.16 | (\$0.96) |



Description:

The route provides commuter bus service from a Route 7 park and ride location in the vicinity of the intersection with George Washington Boulevard. In Phase I, this route will proceed from these locations onto Route 7 and then turn south on Route 28 to reach the Dulles Toll Road and service through to Washington, D.C. A total of 12 AM and 12 PM trips would be needed to meet anticipated ridership demand in Phase I. In Phase III, when Route 7 and Route 28 are anticipated to become limited access facilities, the route will proceed along Pacific Boulevard prior to accessing Route 28, near the vicinity of Nokes Boulevard. The route would then proceed southbound along Route 28 to gain access to the Dulles Toll Road. In Phase III, demand for this route is diminished due to many other public transit options, and a reduced service plan of four (4) trips each in the AM and PM is proposed. Total run time is estimated at 115 minutes in Phase III.

*Phase III represents the scenario with self-sustaining fares and service to Washington, D.C.

Note: The park and ride lot opened in May 2009 with commuter bus service.

Potential Advantages:

- Serves new market, with strong projected ridership demand from central Route 7 corridor to Washington, D.C.

Potential Challenges:

- Park and ride capacity will not meet projected demand, but in reality, riders will be spread across area commuter routes including Dulles North.

Synopsis:

During Phase I, with the volume of bus runs projected, it should be considered to operate a certain number as short-turns to the West Falls Church Metrorail Station, to provide for reverse commute access to George Washington University. Runs can be scheduled such that following one short-turn/reverse commute movement, the bus collects riders for another peak direction trip. With route changes proposed between Phase I and Phase III, the continued monitoring and assessment of travel demand and origin/destination pairs through regular rider surveys should be instituted in general, and for this route in particular.

Note: Modeling of commuter bus ridership is highly sensitive to travel times and was not constrained by the number of park and ride spaces in commuter lots. As a result, projections within a corridor having multiple lots may appear high in one location and low in another (ex: Purcellville and Leesburg along Route 7 or Ashburn North and Dulles North along Route 28). In reality, ridership distribution among lots would likely be more balanced and/or subject to rider preferences and habits that may not relate to travel times.



Transit Recommendations Profile

Sterling Circulator

Type: Fixed-Route Service - Modified

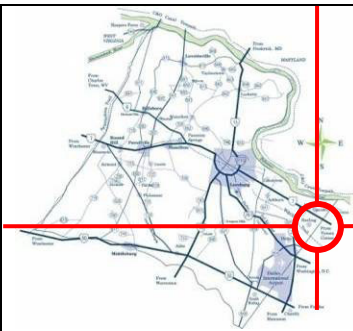
Implementation Phase: Phase I

Service Area Population: 59,661 w/in ½ mi. of proposed route

Est. Phase I Annual Operating Cost: \$440,000



Conceptual Routes/
Park and Ride Lots



Proposed Service Locator

| PERFORMANCE DATA | Phase I | Phase II | Phase III |
|---------------------------|---------|----------|-----------|
| Projected daily ridership | 430 | 300 | 440 |
| Passengers per hour | 7.7 | 5.3 | 7.9 |
| Net cost per passenger | \$2.66 | \$11.16 | \$7.13 |

Description:

Community outreach by Loudoun County Planning staff indicated the desire for expanded service to the Sterling / Potomac area. This service option modifies the existing Sterling/Countryside Connector route with new circulation both north and south in the vicinity of Sterling Boulevard. Service along Frederick Drive and Potomac View Road provides expanded coverage south of Route 7 in conjunction with the 7 to 7 on 7 service. Additional connectivity is also included to Dranesville Road, allowing transfers to new express bus service traveling from this region to Herndon. As primarily a loop circulator, service would ideally operate in both directions, providing increased convenience for passengers making local trips. This service will feature 30 minute headways throughout the day, and this route is expected to exhibit higher off-peak patronage (around 20% of overall ridership) than many other local routes currently experience. This route is anticipated to remain unchanged into Phase III of implementation.



Potential Advantages:

- Expanded coverage in locations favorable to increased transit utilization.
- Provides increased connectivity between Fairfax County and business corridors in eastern Loudoun County.

Potential Challenges:

- Certain service segments feature indirect routing.
- Service provided (cost/hours) comparable to 7 to 7 on 7 service, but productivity measures are lower with limited potential to increase.

Synopsis:

This route provides a high level of service in a region with travel demand; however the productivity of these anticipated services does not increase at the same level as the increase in service hours. Upon implementation, on-board investigations should be used to further pinpoint the segments of the circulator that experience the highest passenger loads. Service adjustments and efficiencies could then be enacted to maintain ridership but reduce the overall cost of providing service.

Note: Modeling of commuter bus ridership is highly sensitive to travel times and was not constrained by the number of park and ride spaces in commuter lots. As a result, projections within a corridor having multiple lots may appear high in one location and low in another (ex: Purcellville and Leesburg along Route 7 or Ashburn North and Dulles North along Route 28). In reality, ridership distribution among lots would likely be more balanced and/or subject to rider preferences and habits that may not relate to travel times.



Transit Recommendations Profile

Sterling/Potomac to Fairfax

Type: Express Bus Service

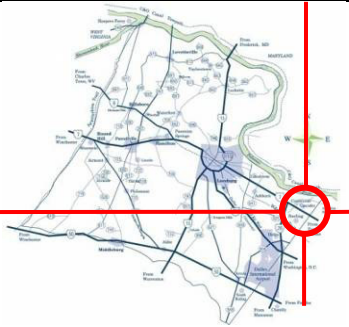
Implementation Phase: Phase I

Service Area Population: 59,661 w/in ½ mi. of proposed route

Est. Phase I Annual Operating Cost: \$1,400,000

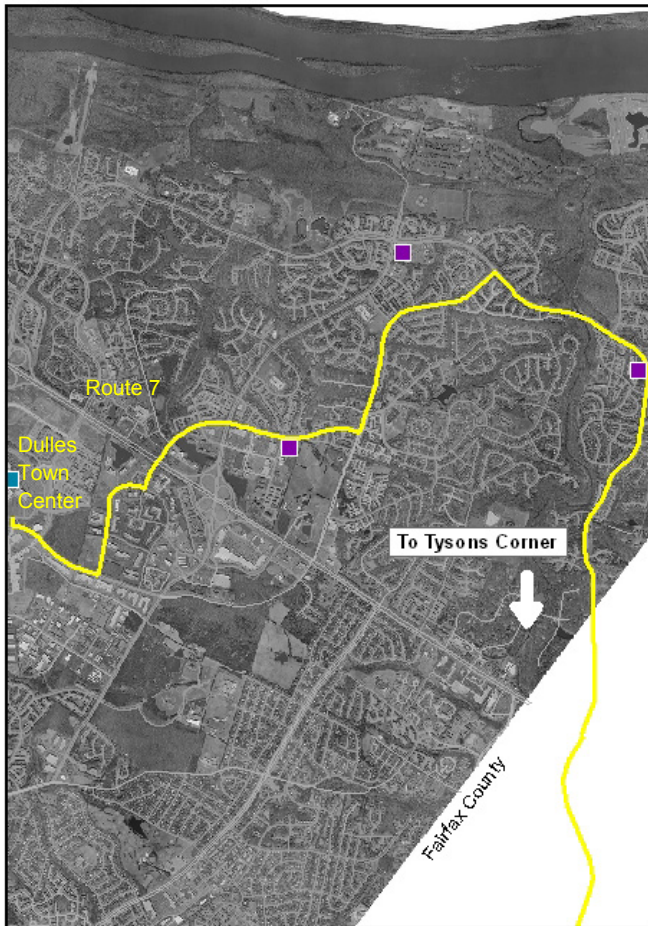


Conceptual Routes/
Park and Ride Lots



Proposed Service Locator

| PERFORMANCE DATA | Phase I | Phase II | Phase III |
|---------------------------|---------|----------|-----------|
| Projected daily ridership | 530 | 780 | 310 |
| Passengers per hour | 9.9 | 26.1 | 10.2 |
| Net cost per passenger | \$7.13 | \$0.84 | \$6.84 |



Description:

This service option provides for a direct connection from several park and ride locations to key destinations in Fairfax County. The route begins at Dulles Town Center, and proceeds into the Sugarland Run area via the Cascades Parkway, Potomac View Road and Algonkian Parkway. The route then proceeds south along the Fairfax County Parkway to the Herndon/Monroe park and ride location and transfer center. The route then continues via the Dulles Toll Road to Reston and Tysons Corner. The express service proposed in this route is intended to accommodate some of the extensive cross-border travel pairs identified during demographic analysis. Current service levels include 15 minute peak period headways, providing more schedule flexibility, but requiring smaller, more frequent vehicle trips. Commuter bus service to West Falls Church Metrorail would continue to operate separately from locations served by this route, with the potential for the express bus service to also feed specific runs.

Potential Advantages:

- Provides for cross-border circulation at a higher frequency than currently offered.
- Direct connection to numerous Fairfax locations eliminates the need for one, and possibly more, transfers.

Potential Challenges:

- Frequency of service and length of initial route requires a large fleet of vehicles and drivers for relatively small passenger loads.

Synopsis:

As designed, this route is most favorable for serving peak travel directions into Fairfax County in the AM. Different routing options, however, in the off-peak could allow returning vehicles to provide for reverse commute trips. Routes featuring separate peak and off-peak routing could lead to better vehicle utilization. This route will also increase in efficiency when Metrorail service to Wiehle Avenue will enable it to terminate at this location, providing reduced cycle times.

Note: Modeling of commuter bus ridership is highly sensitive to travel times and was not constrained by the number of park and ride spaces in commuter lots. As a result, projections within a corridor having multiple lots may appear high in one location and low in another (ex: Purcellville and Leesburg along Route 7 or Ashburn North and Dulles North along Route 28). In reality, ridership distribution among lots would likely be more balanced and/or subject to rider preferences and habits that may not relate to travel times.



Transit Recommendations Profile

7 to 7 on 7

Type: Fixed-Route Service-Modified

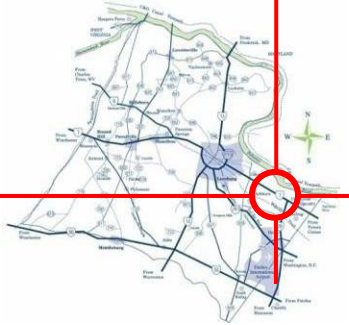
Implementation Phase: Phase I

Service Area Population: 119,322 w/in ½ mi. of proposed route

Est. Phase I Annual Operating Cost: \$440,000

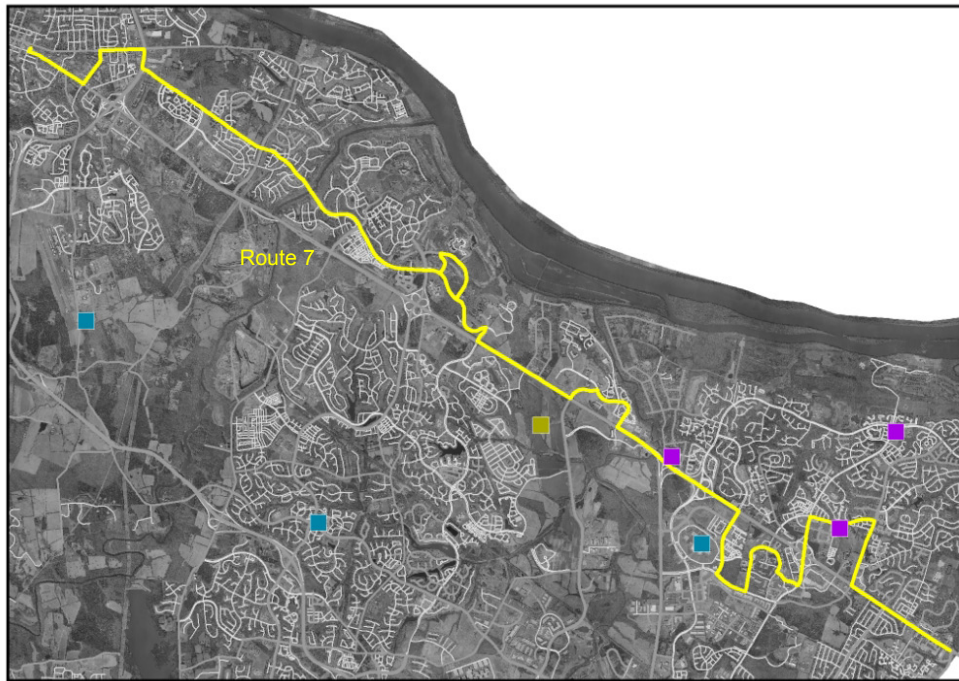


Conceptual Routes/
Park and Ride Lots



Proposed Service Locator

| PERFORMANCE DATA | Phase I | Phase II | Phase III |
|---------------------------|---------|----------|-----------|
| Projected daily ridership | 590 | 690 | 890 |
| Passengers per hour | 10.5 | 12.3 | 15.9 |
| Net cost per passenger | \$1.62 | \$1.20 | \$2.90 |



Description:

This route historically provides the most productive service; only slight modifications are proposed. This route serves most major transfer locations for the proposed County system. Streamlining and reducing some deviations off Route 7 between Dulles Town Center and Dranesville Road is proposed, in conjunction with expanded Sterling service. Service frequency is scheduled to remain at 30 minutes, with the hours of service expanded to 6 AM to 8 PM.

This route currently provides the only cross-county connectivity with Fairfax Connector transit service, a role anticipated to diminish as other proposed routes will increasingly serve these cross-county trips and provide more direct connections into Fairfax County. Despite these increased travel options, and the fact that current cross-county transfers are a small portion of travel demand on the 7 to 7 on 7, ridership forecasts indicate robust growth into Phase III.

Potential Advantages:

- This route is the central linkage between existing and many new expanded services.
- Operational changes (skip-stop) can further tailor service based on passenger demand for either circulator or cross-county trips.

Potential Challenges:

- Continued service productivity and efficiency dependent on corridor improvements to benefit traffic flow and transit priority (i.e. travel time).
- Ridership pattern may justify increased peak hour frequency, requiring additional coordination of scheduling and transfers with less frequent routes.

Synopsis:

The importance of this route as a distributor among the various north-south services will increase throughout the timeline of this plan, as the number of County routes is progressively expanded. As the continued highest ridership route, further consideration for increased peak frequency and a schedule of weekend service at longer headways is highly recommended.

Note: Modeling of commuter bus ridership is highly sensitive to travel times and was not constrained by the number of park and ride spaces in commuter lots. As a result, projections within a corridor having multiple lots may appear high in one location and low in another (ex: Purcellville and Leesburg along Route 7 or Ashburn North and Dulles North along Route 28). In reality, ridership distribution among lots would likely be more balanced and/or subject to rider preferences and habits that may not relate to travel times.



Transit Recommendations Profile

Route 28 to Manassas

Type: Inter-County Fixed Route

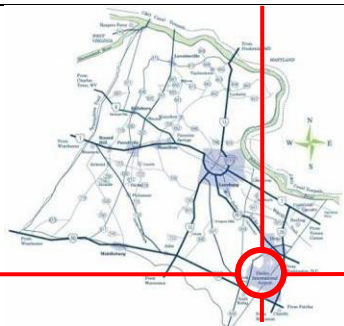
Implementation Phase: Phase I

Service Area Population: 13,471 w/in ½ mi. of proposed route

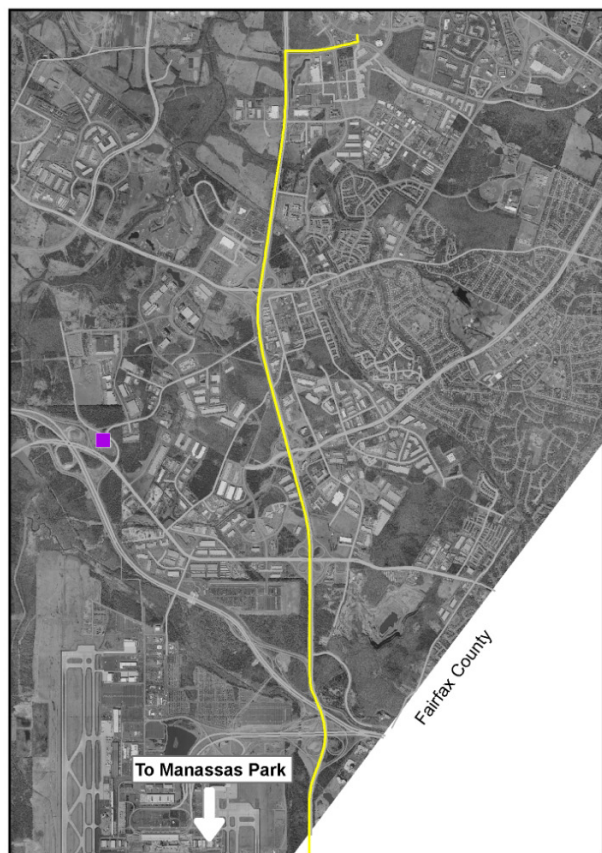
Est. Annual Operating Cost: \$155,000



Conceptual Routes/
Park and Ride Lots



| PERFORMANCE DATA | Phase I | Phase II | Phase III |
|---------------------------|---------|----------|-----------|
| Projected daily ridership | 180 | 180 | 300 |
| Passengers per hour | 19.8 | 20.0 | 25.9 |
| Net cost per passenger | \$0.34 | \$0.30 | \$0.86 |



Description:

This route provides connections along Route 28 from Dulles Town Center to Manassas, traversing Fairfax and Prince William Counties. This route would feature a stop at Dulles Airport in Phases I and II and would be streamlined to stop at the Route 28 Metrorail station instead of directly at the airport in Phase III. This service would also interface with the proposed and expanded services in the corridor, increasing service options for the local fixed-route business park circulators. Ridership estimation indicates a very productive service, with continued increase in demand for Route 28 transit travel in Phase III, when this route would transition to more of an Express service, primarily stopping at major transfer centers and the Route 28 Metrorail Station only. This corridor should be studied in the future for rapid transit (Bus Rapid Transit, light rail or elevated rail).

Potential Advantages:

- Provides connectivity for Prince William and Manassas workers to Dulles Airport and Loudoun employment centers.
- Additional option to meet increased travel demand to this region as existing and planned development occur in this corridor.

Potential Challenges:

- In Phase I, the provision of additional stops to generate ridership could penalize overall travel time advantages.
- The service serves three jurisdictions and should be coordinated/funded jointly.

Synopsis:

This route, in combination with the Atlantic Circulator, provides service coverage for the currently operated Dulles 2 Dulles route. Passenger loading and trip purpose should be closely monitored as this service is implemented, as it has the potential to serve multiple markets including airport travelers, airport workers, Loudoun residents traveling to Fairfax and Manassas and Manassas/Prince William residents traveling to Route 28 employers in Fairfax and Loudoun Counties.

Note: Modeling of commuter bus ridership is highly sensitive to travel times and was not constrained by the number of park and ride spaces in commuter lots. As a result, projections within a corridor having multiple lots may appear high in one location and low in another (ex: Purcellville and Leesburg along Route 7 or Ashburn North and Dulles North along Route 28). In reality, ridership distribution among lots would likely be more balanced and/or subject to rider preferences and habits that may not relate to travel times.



Transit Recommendations Profile

Dulles Town Center to Fairfax

Type: Express Bus Service

Implementation Phase: Phase I

Service Area Population: 13,471 w/in ½ mi. of proposed route

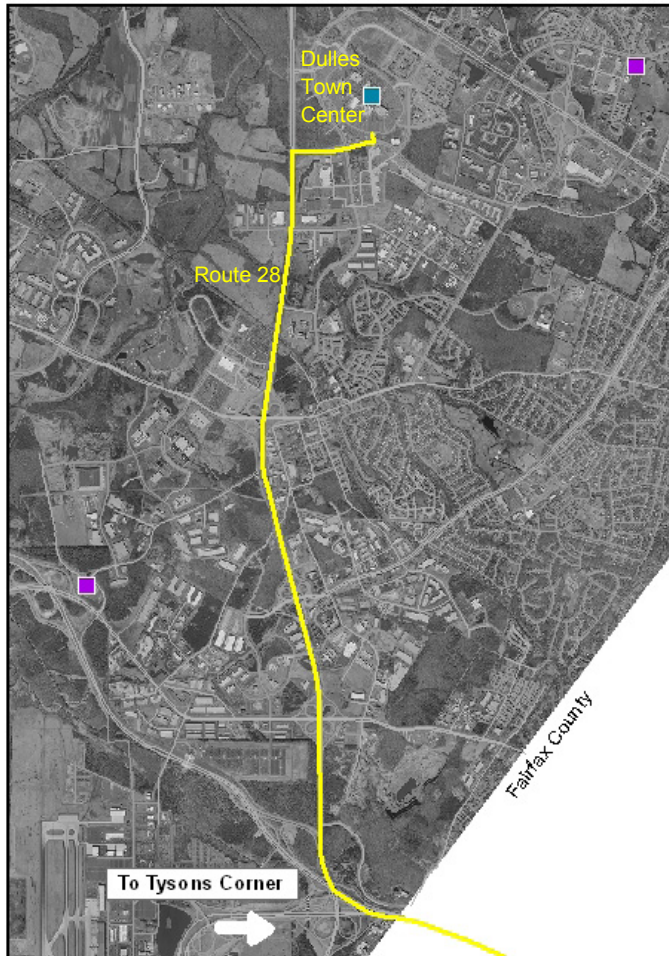
Est. Phase I Annual Operating Cost: \$624,000



Conceptual Routes/
Park and Ride Lots

Proposed Service Locator

| PERFORMANCE DATA | Phase I | Phase II | Phase III |
|---------------------------|---------|----------|-----------|
| Projected daily ridership | 390 | 240 | n/a |
| Passengers per hour | 16.0 | 19.8 | n/a |
| Net cost per passenger | \$3.23 | \$2.06 | n/a |



Description:

This service option allows for travel from Dulles Town Center south along Route 28 to the Dulles Toll Road, with direct connections to Herndon/Monroe, Reston, and Tysons Corner. This peak service is designed to collect transfers from the numerous local routes serving the Dulles Town Center vicinity and provide for cross-border travel needs. The proposed frequency of service is every 30 minutes, allowing for timed transfers. The route is not anticipated to make any intermediate stops. Upon extension of Metrorail to Wiehle Avenue in Phase II, this route would terminate at this station location. In Phase III, more direct connecting routes to Metrorail are available, which accommodate the same travel patterns and therefore this service would be subsequently eliminated. In Phase II, it appears that the demand would still exist for this type of service, but some reverse-commute trips from the Wiehle Avenue Metrorail station would likely be better served by the Atlantic and Pacific Circulator routes which directly access Loudoun employment centers. Nevertheless, a reverse service on this route should be explored, particularly as employment grows at Dulles Town Center.

Potential Advantages:

- Provides cross-border connectivity from the local system hub in eastern Loudoun County.
- Point to point service is simple to implement.

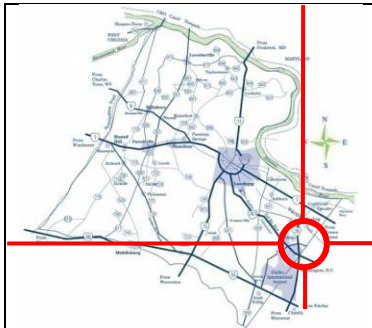
Potential Challenges:

- Need to assure full vehicles as having no intermediate stops will limit revenue generating potential.

Synopsis:

The route as designed may have applications beyond the peak period, and the potential for operating this service all day should be investigated as well as reverse direction service.

Note: Modeling of commuter bus ridership is highly sensitive to travel times and was not constrained by the number of park and ride spaces in commuter lots. As a result, projections within a corridor having multiple lots may appear high in one location and low in another (ex: Purcellville and Leesburg along Route 7 or Ashburn North and Dulles North along Route 28). In reality, ridership distribution among lots would likely be more balanced and/or subject to rider preferences and habits that may not relate to travel times.



Proposed Service Locator

Transit Recommendations Profile

Dulles North to Fairfax

Type: Express Bus Service

Implementation Phase: Phase I

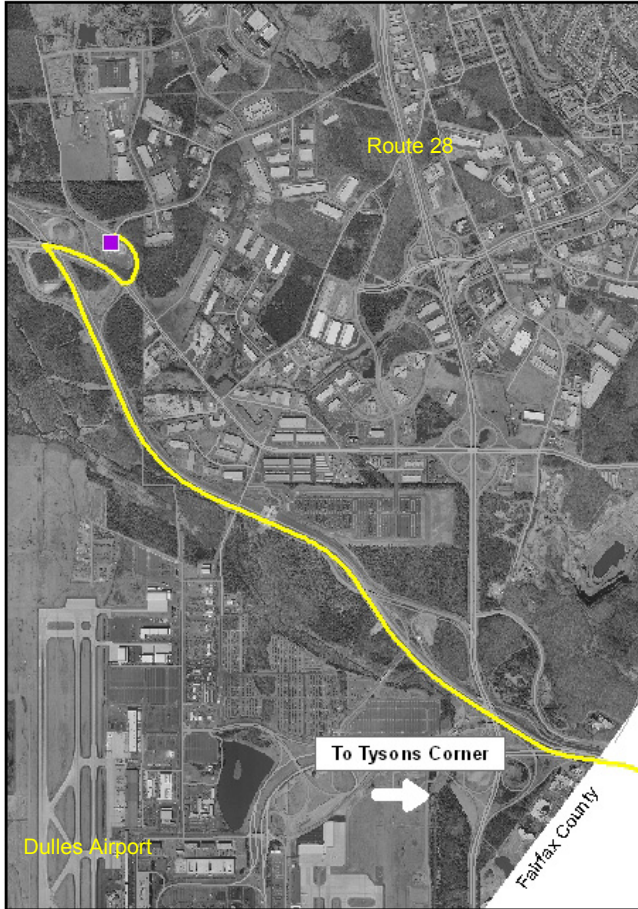
Service Area Population: 12,350 w/in ½ mi. of proposed route

Est. Phase I Annual Operating Cost: \$940,000

| PERFORMANCE DATA | Phase I | Phase II | Phase III |
|---------------------------|---------|----------|-----------|
| Projected daily ridership | 490 | 230 | n/a |
| Passengers per hour | 13.6 | 9.6 | n/a |
| Net cost per passenger | \$4.38 | \$7.43 | n/a |



Conceptual Routes/
Park and Ride Lots



Description:

This route provides for cross-border commuter travel between Loudoun and Fairfax County prior to Metrorail service reaching Loudoun County. The route follows existing commuter service routes along the Dulles Toll Road, yet proceeds in Phase I no further east than Tysons Corner. The route will be further shortened in Phase II by only traveling as far east as the Wiehle Avenue Metrorail station in Reston. Upon Metrorail extension into Loudoun County in Phase III, this route will no longer be needed. The express service proposed in this route is intended to accommodate some of the extensive cross-border travel pairs identified during demographic analysis. Modeled service levels include 15 minute headways in the peak period, providing more schedule flexibility, but requiring smaller more frequent vehicle trips. It may be possible to include reverse-direction service for reverse-commuters in Phase I and Phase II. However, travelers on this route would need to transfer to the Atlantic Circulator to access employment centers, and in Phase II, the Atlantic (and Pacific) Circulators also serve the Wiehle Avenue Metrorail station, which may explain the drop in ridership on this Express route in Phase II.

Potential Advantages:

- Provides a new cross-border route along the Dulles Greenway and Toll Road, complimenting current and enhanced connections on Route 7.

Potential Challenges:

- Limited capacity at current Dulles North Location may hinder the expansion of services from this location.
- Need to assure full vehicles as no intermediate stops will limit revenue generating potential.

Synopsis:

As designed, this route is most favorable for serving the peak travel directions into Fairfax County in the AM and returning in the PM. Different routing options in the peak and/or off-peak could allow returning vehicles to provide for reverse commute trips. Routes featuring separate peak and off-peak routing could lead to better vehicle utilization. The potential redundancy of this route and the Atlantic/Pacific Circulators in Phase II should be monitored when Phase II route changes occur.

Note: Modeling of commuter bus ridership is highly sensitive to travel times and was not constrained by the number of park and ride spaces in commuter lots. As a result, projections within a corridor having multiple lots may appear high in one location and low in another (ex: Purcellville and Leesburg along Route 7 or Ashburn North and Dulles North along Route 28). In reality, ridership distribution among lots would likely be more balanced and/or subject to rider preferences and habits that may not relate to travel times.



Transit Recommendations Profile

Ashburn Village Connector

Type: Fixed-Route Service-Modified

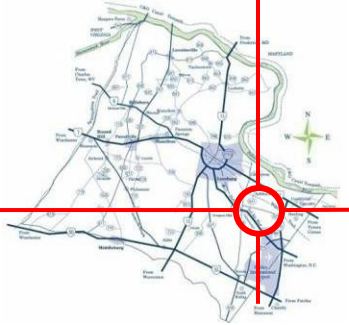
Implementation Phase: Phase I

Service Area Population: 74,239 w/in ½ mi. of proposed route

Est. Phase I Annual Operating Cost: \$110,000

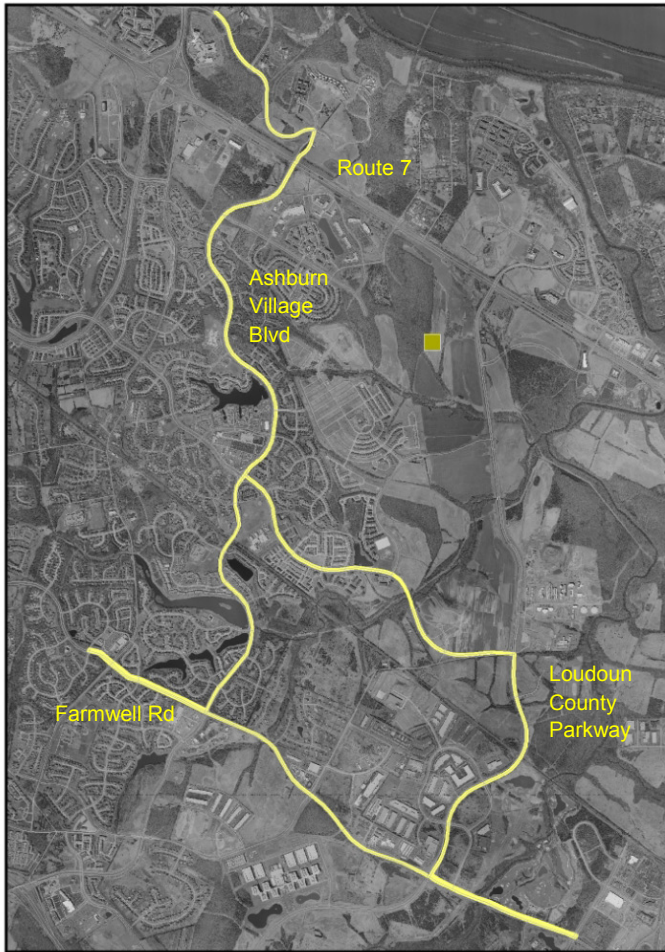


Conceptual Routes/
Park and Ride Lots



Proposed Service Locator

| PERFORMANCE DATA | Phase I | Phase II | Phase III |
|---------------------------|---------|----------|-----------|
| Projected daily ridership | 150 | 180 | 170 |
| Passengers per hour | 10.5 | 11.4 | 11.9 |
| Net cost per passenger | \$1.61 | \$1.39 | \$4.28 |



Description:

This service option anticipates incorporation of a circulator loop to the existing Ashburn Village route. This will eliminate the current backtrack required on this segment. Additional connectivity is provided to the Ashburn Farm Shuttle, with this route suggested to be interlined with certain shuttle runs. The Ashburn Village Connector headway is anticipated to remain at 60 minutes in all phases of the plan. As increased demand occurs in the Loudoun County Parkway and Pacific Boulevard corridor during Phase III, additional routes will be added to specifically serve this growth. This route is recommended to be altered during Phase III, to incorporate a stop at the Moorefield Metrorail Station at Loudoun County Parkway and the Dulles Greenway. The Moorefield Station is destined to become a hub for numerous new transit feeder and distribution services.

Potential Advantages:

- This option provides feeder services to additional proposed commuter routes within the Loudoun County Parkway and Route 28 corridor.

Potential Challenges:

- Design of service contingent on developer-led infrastructure improvements.
- The potential for high demand during peak commute times with limited off-peak demand could result in service inefficiencies.

Synopsis:

This route preserves connectivity across various services, with continued emphasis on developing a stronger ridership base along the middle of the route. Alternating the route to adjacent developments which lack optimum pedestrian connectivity to reach stops along the main route, or providing a deviated fixed-route to accomplish the same access to off-route activity centers are operational options. For commuter purposes, especially the interface with the Ashburn Farm Shuttle, this route may benefit from increased peak period frequencies to improve transfers and interline operations.

Note: Modeling of commuter bus ridership is highly sensitive to travel times and was not constrained by the number of park and ride spaces in commuter lots. As a result, projections within a corridor having multiple lots may appear high in one location and low in another (ex: Purcellville and Leesburg along Route 7 or Ashburn North and Dulles North along Route 28). In reality, ridership distribution among lots would likely be more balanced and/or subject to rider preferences and habits that may not relate to travel times.



Transit Recommendations Profile

Ashburn Farm Shuttle

Type: Local Fixed Route

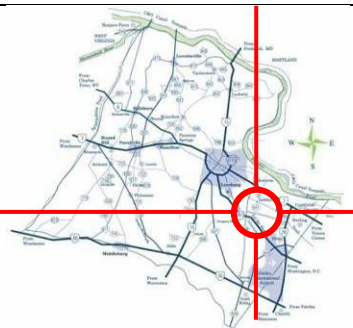
Implementation Phase: Phase I

Service Area Population: 48,194 w/in ½ mi. of proposed route

Est. Phase I Annual Operating Cost: \$117,000

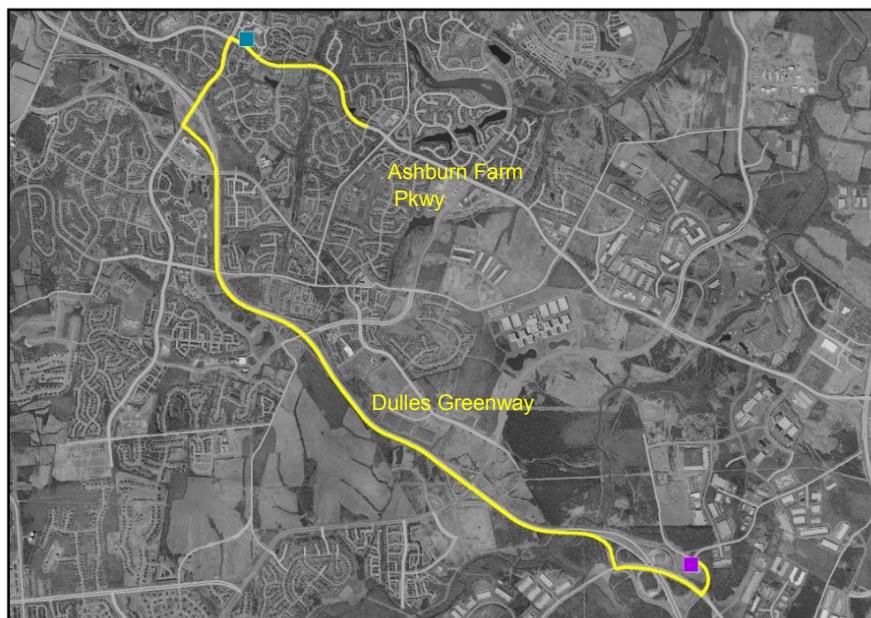


Conceptual Routes/
Park and Ride Lots



Proposed Service Locator

| PERFORMANCE DATA | Phase I | Phase II | Phase III |
|---------------------------|---------|----------|-----------|
| Projected daily ridership | 150 | 270 | 160 |
| Passengers per hour | 10.1 | 18.1 | 10.9 |
| Net cost per passenger | \$1.73 | \$0.40 | \$4.79 |



Description:

This route provides a frequent (15 minute headway) feeder service in the peak morning and evening periods to/from park and ride lots within the Ashburn Area, providing a commuter connection to the Dulles North Transit Center. This recommendation reflects a currently operated pilot service provided by Loudoun County Transit, currently stopping at the following locations: Plaza Shopping Center, Crossroads United Methodist Church, and Claiborne Parkway (pedestrian only). Connections to the Ashburn Village connector at the Parkhurst Plaza location are provided. This service is intended to replace the current all-day fixed route Ashburn Farm service. Due to low productivity measures, a deviated fixed-route or entirely demand response service is recommended to address any mobility needs lost through this transition.

Potential Advantages:

- In a traditional low transit productivity area, this option focuses service to the times and locations of greatest need, allowing for potential increases in route performance and efficiency.

Potential Challenges:

- Current lower density development patterns and limited pedestrian connectivity make timely circulation and distribution difficult beyond a few key locations.
- Loss of all-day fixed-route service along Ashburn Farm route, absent initiation of an alternate service delivery method.

Synopsis:

Initial service goals for the pilot program focused on providing parking capacity relief at the Dulles North Transit Center. Additional policy incentives should be considered (pay parking, timed transfers, platoon departures of commuter buses) to bolster shuttle ridership. The new Route 606 Metrorail station (Phase III) anticipates to increase parking capacity by 2,000 spaces, and increased parking capacity may allow this service to become a local circulator to distribute Metrorail riders to adjacent destinations. Under this scenario, expanding the hours this service is available would also be re-evaluated.

Note: Modeling of commuter bus ridership is highly sensitive to travel times and was not constrained by the number of park and ride spaces in commuter lots. As a result, projections within a corridor having multiple lots may appear high in one location and low in another (ex: Purcellville and Leesburg along Route 7 or Ashburn North and Dulles North along Route 28). In reality, ridership distribution among lots would likely be more balanced and/or subject to rider preferences and habits that may not relate to travel times.



Transit Recommendations Profile

Atlantic Circulator

Type: Fixed-Route Service

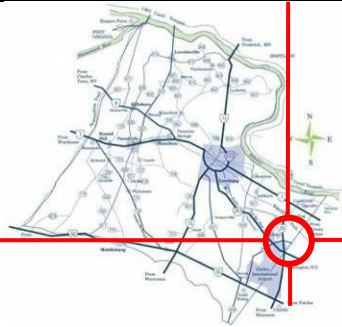
Implementation Phase: Phase I

Service Area Population: 26,166 w/in ½ mi. of proposed route

Est. Phase I Annual Operating Cost: \$235,000

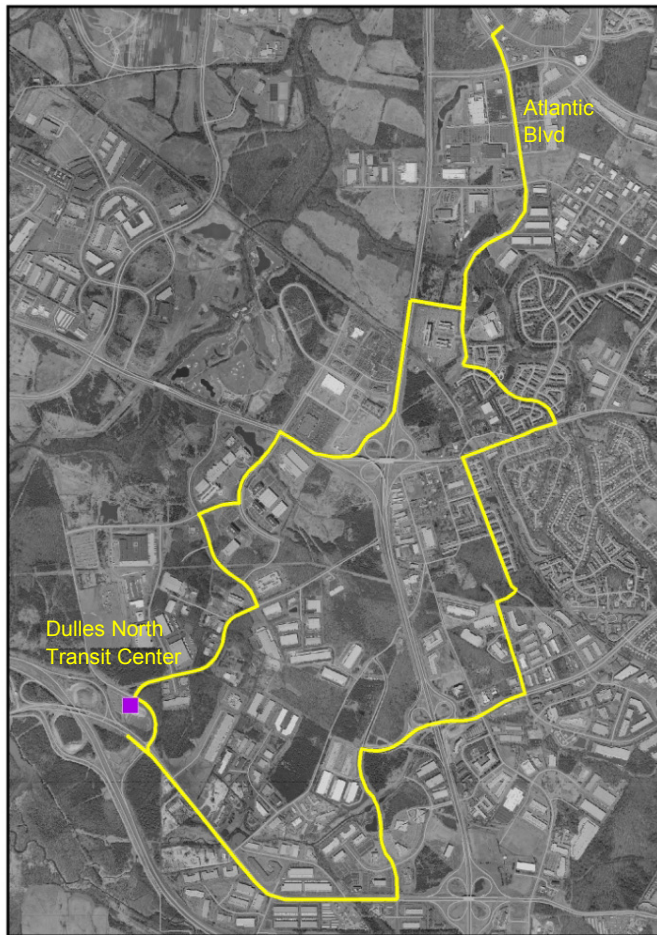


Conceptual Routes/
Park and Ride Lots



Proposed Service Locator

| PERFORMANCE DATA | Phase I | Phase II | Phase III |
|---------------------------|---------|----------|-----------|
| Projected daily ridership | 240 | 1,000 | 470 |
| Passengers per hour | 8.0 | 36.1 | 15.7 |
| Net cost per passenger | \$2.48 | 1.52 | \$2.95 |



Description:

This service option modifies the existing Dulles 2 Dulles route, transforming it into a peak period commuter-oriented service between Dulles Town Center and the Dulles North Transit Center. Peak period frequencies will operate every 15 min., providing reverse commute access from transfers at the Dulles North Transit Center into the business park developments along Atlantic Boulevard and Old Ox Road. In Phase I, prior to implementation of Pacific Boulevard service, a circulator loop retaining service on Pacific Boulevard and to the AOL campus will be an initial component of this route. This loop segment of the route should operate in alternate directions between runs, providing direct routing to various business developments. In Phase II, the route will be extended along the Dulles Greenway/Toll Road corridor to the Wiehle Avenue Metrorail station, prompting an increase in ridership. In Phase III, this route would connect with the Route 606 Metrorail station, also linking with cross-county commuter routes at that location.

Potential Advantages:

- Concentrates frequent service in a high development corridor.
- Provides frequent connecting service from Commuter services into Dulles Town Center and connections with all eastern Loudoun County routes.

Potential Challenges:

- Initial routing may feature indirect segments in order to preserve as much connectivity as possible.
- Loss of all day service should be reviewed, as some business sites may feature shift work and have lunch time travel needs.

Synopsis:

This route introduces a high frequency local commuter option into the Route 28 corridor. The estimated ridership productivity indicates that this service would generate the highest amount of hourly transit trips of all Phase I services. The need to provide a moderate form of all day, or at least some mid-day service to this area should be further investigated based on current Dulles to Dulles ridership trends.

Note: Modeling of commuter bus ridership is highly sensitive to travel times and was not constrained by the number of park and ride spaces in commuter lots. As a result, projections within a corridor having multiple lots may appear high in one location and low in another (ex: Purcellville and Leesburg along Route 7 or Ashburn North and Dulles North along Route 28). In reality, ridership distribution among lots would likely be more balanced and/or subject to rider preferences and habits that may not relate to travel times.



Transit Recommendations Profile

Cross-County Connector

Type: Commuter Bus

Implementation Phase: Phase I

Service Area Population: 97,649 w/in 5 mi. of proposed stations

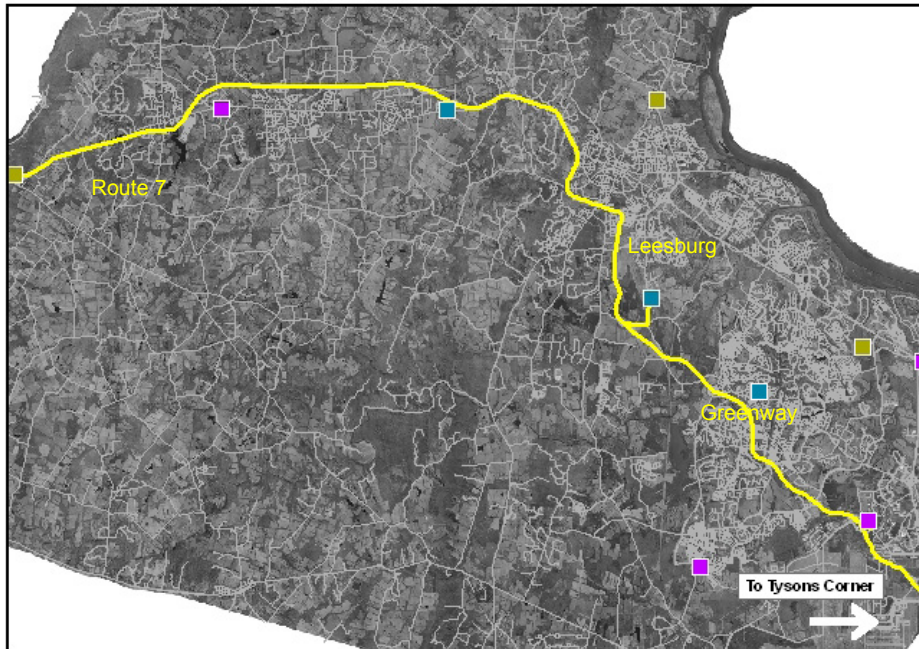
Est. Phase I Annual Operating Cost: \$984,000



Conceptual Routes/
Park and Ride Lots

Proposed Service Locator

| PERFORMANCE DATA | Phase I | Phase II | Phase III* |
|---------------------------|---------|----------|------------|
| Projected daily ridership | 410 | 720 | 220 |
| Passengers per hour | 23.5 | 24.6 | 47.9 |
| Net cost per passenger | \$2.38 | \$1.95 | (\$7.00) |



*Phase III represents self-sustaining fare option for commuter service

Description:

This route provides a long distance commuter option that can capture ridership from locations west of Loudoun County and deliver passengers to key locations along Route 7 in the west and the Dulles Greenway in the east. The route would provide connections at Leesburg, Dulles North Transit Center and then continue to Herndon/Monroe, Reston and Tysons Corner transfer points in Fairfax County. The proposed service plan in Phase I provides for six (6) AM and six (6) PM trips, with a total one-way travel time estimated at 90 minutes. Service would peak in Phase II with 10 runs in each period. In Phase III, only three (3) trips each way are proposed as demand is reduced with subsequent route changes from Metrorail expansion.

Potential Advantages:

- Accommodates longer distance travel to employment centers in eastern Loudoun and western Fairfax County.
- Service can be well integrated into local fixed-route network for distribution to various destinations.

Potential Challenges:

- Requires new park and ride near County line.
- Travel delays due to congestion may be experienced in western Loudoun County absent transit-specific improvements.

Synopsis:

This service provides an extension of commuter services in order to capture travel demand from Clarke County and points west of Loudoun County. The commuter service focuses only on the employment centers in eastern Loudoun County, much as other services focus on Rosslyn, the Pentagon, and the District of Columbia. Potential operating options could include diverting some routes into adjacent business parks to provide service directly to major centers, and not require passengers to transfer. Decrease in ridership may be due to availability of Metrorail and/or the removal of bottlenecks on Route 7 that would make auto travel more appealing.

Note: Modeling of commuter bus ridership is highly sensitive to travel times and was not constrained by the number of park and ride spaces in commuter lots. As a result, projections within a corridor having multiple lots may appear high in one location and low in another (ex: Purcellville and Leesburg along Route 7 or Ashburn North and Dulles North along Route 28). In reality, ridership distribution among lots would likely be more balanced and/or subject to rider preferences and habits that may not relate to travel times.



Transit Recommendations Profile

Route 15 North to DC

Type: Commuter Bus Service

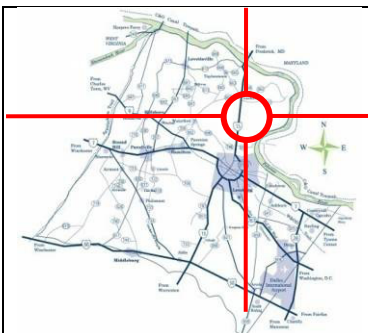
Implementation Phase: Phase I

Service Area Population: 92,391 w/in 5 mi. of proposed stations

Est. Phase I Annual Operating Cost: \$792,000

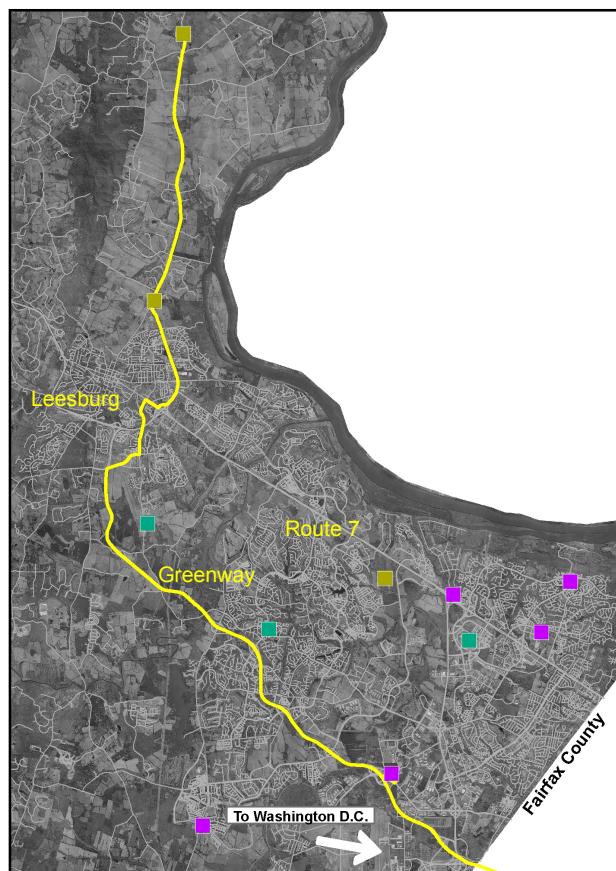


Conceptual Routes/
Park and Ride Lots



Proposed Service Locator

| PERFORMANCE DATA | Phase I | Phase II | Phase III* |
|---------------------------|---------|----------|------------|
| Projected daily ridership | 330 | 670 | 250 |
| Passengers per hour | 23.6 | 22.7 | 13.4 |
| Net cost per passenger | \$2.33 | \$2.71 | \$4.80 |



Description:

This new commuter bus route would collect passengers from one or more park and ride locations north of the Town of Leesburg on Route 15. Analysis of current commuter bus park and ride patronage indicates there is some demand for service originating within this area. Also, this is a congested corridor that is anticipated to worsen over time, which can be alleviated in part through bus service. The northern extent of service on Route 15 shall remain flexible to meeting demand and availability of park and ride locations. From here, the route would proceed southbound on Route 15 to Leesburg, eastward to the Dulles North Transit Center, and then via the Dulles Greenway to Rosslyn, the Pentagon and Washington, D.C. The proposed service plan initially provides for five (5) trips each in the AM and PM in Phase I. Demand for service would peak in Phase II, potentially requiring additional runs to meet demand. In Phase III, the number of trips is four (4) each in the AM and PM, reflecting a slight shift to new services and the Metrorail connections at this time. Travel times to DC are predicted to be 85 minutes in Phase I and 140 minutes in Phase III.

*Phase III represents the scenario with self-sustaining fares and service to Washington, D.C.

Potential Advantages:

- Provides the ability to intercept travelers at locations closer to their homes, relieving parking pressures at park and rides closer to Leesburg and beyond.

Potential Challenges:

- Selection and construction of an optimum park and ride location in a low density, rural environment is required to be able to offer this service.

Synopsis:

Dependent on analysis of travel demand for current Leesburg commuter services, this service could represent redirecting some Leesburg routes to originate on Route 15, and not necessarily require new vehicles for each run. As with current Purcellville service, vehicles could additionally make stops in Leesburg and at the Dulles North Transit Center. Alternatively, the Route 15 buses could terminate at Tysons Corner and passengers destined for Washington, D.C. could transfer at Leesburg or Dulles North to DC-bound routes. This approach is supported by origin-destination analysis of traffic on Route 15 for the Countywide Transportation Plan update. Phase III ridership decline may be due to improved auto travel times from Leesburg eastward resulting from roadway improvements, and/or availability of Metrorail service.

Note: Modeling of commuter bus ridership is highly sensitive to travel times and was not constrained by the number of park and ride spaces in commuter lots. As a result, projections within a corridor having multiple lots may appear high in one location and low in another (ex: Purcellville and Leesburg along Route 7 or Ashburn North and Dulles North along Route 28). In reality, ridership distribution among lots would likely be more balanced and/or subject to rider preferences and habits that may not relate to travel times.



Transit Recommendations Profile

Route 9 Connector

Type: Commuter Bus Service

Implementation Phase: Phase I

Service Area Population: 87,888 w/in 5 mi. of proposed stations

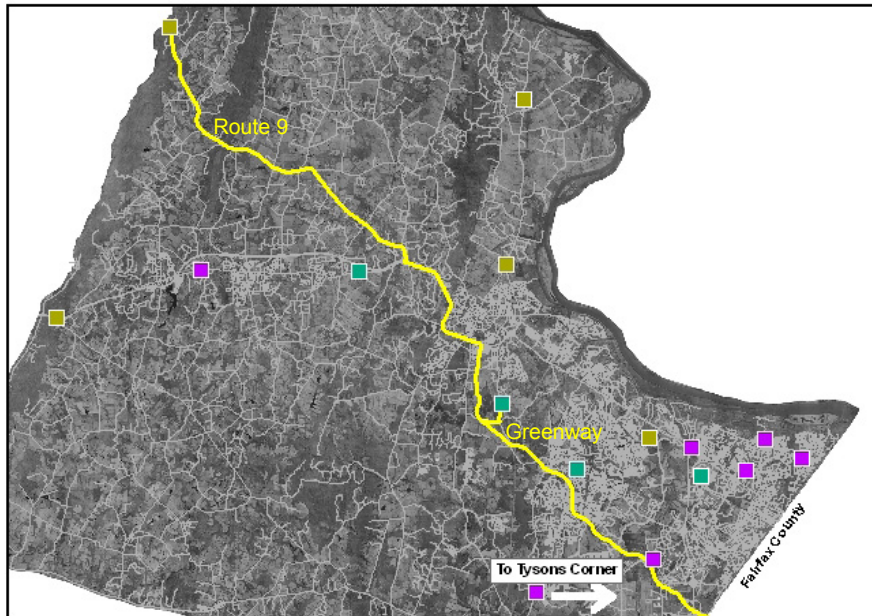
Est. Phase I Annual Operating Cost: \$978,000

| PERFORMANCE DATA | Phase I | Phase II | Phase III* |
|---------------------------|---------|----------|------------|
| Projected daily ridership | 360 | 680 | 140 |
| Passengers per hour | 20.7 | 21.7 | 37.6 |
| Net cost per passenger | \$3.64 | \$3.16 | (\$5.75) |



Conceptual Routes/
Park and Ride Lots

Proposed Service Locator



Description:

In accordance with public input and findings of the CTP, this route proposes a multimodal transit solution to limit through traffic on Route 9. This demand management approach intends to intercept some far western automobile trips (originating in West Virginia) at the County line. Due to the length of travel and potential congestion impacts, this route is anticipated to continue east via Route 9, access the Dulles Greenway, and proceed as far as the Tysons Corner in Phase I. This route will interface with other services at park and ride/transfer locations including Leesburg, Dulles North, and Herndon and Reston in Fairfax County. Transfers would transition to the Metrorail stations as they come on-line. In Phase I, a total of five (5) runs each in the AM and in the PM are proposed, peaking in Phase II with nine (9) runs in each period, then reducing to two (2) trips each way by Phase III in accordance with a projected decrease in demand as this route would terminate at the Moorefield Metrorail Station. Accordingly, overall one-way trip times are 105 minutes in Phase I and 57 minutes in Phase III.

*Phase III represents the higher fare option for commuter service.

Potential Advantages:

- Presents a trip reduction strategy in a congested corridor.

Potential Challenges:

- Requires selection and construction of a park and ride lot in a rural area to develop the route.

Synopsis:

Due to the relatively limited number of peak period commuter bus runs, it remains unlikely the specific transit priority improvements would be justified in Phase I. It would be important to confirm that a majority of Route 9 traffic is destined to eastern Loudoun County. Reduced demand in Phase III may result from Metrorail service or from the removal of bottlenecks in the Route 7 corridor, making auto travel more competitive with transit.

Note: Modeling of commuter bus ridership is highly sensitive to travel times and was not constrained by the number of park and ride spaces in commuter lots. As a result, projections within a corridor having multiple lots may appear high in one location and low in another (ex: Purcellville and Leesburg along Route 7 or Ashburn North and Dulles North along Route 28). In reality, ridership distribution among lots would likely be more balanced and/or subject to rider preferences and habits that may not relate to travel times.



Transit Recommendations Profile

Loudoun County Parkway Circulator

Type: Fixed-Route Service

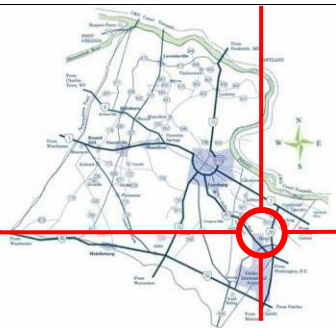
Implementation Phase: Phase II

Service Area Population: 39,874 w/in ½ mi. of proposed route

Est. Phase II Annual Operating Cost: \$624,000

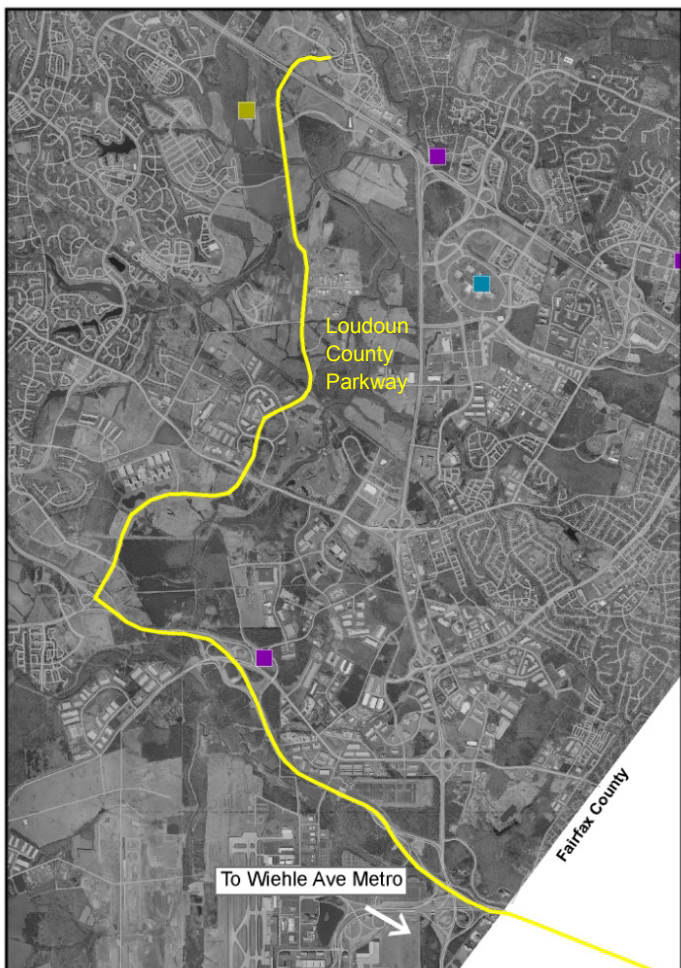


Conceptual Routes/
Park and Ride Lots



Proposed Service Locator

| PERFORMANCE DATA | Phase I | Phase II | Phase III |
|---------------------------|---------|----------|-----------|
| Projected daily ridership | n/a | 770 | 125 |
| Passengers per hour | n/a | 32.3 | 7.0 |
| Net cost per passenger | n/a | \$1.85 | \$8.18 |



Description:

This route provides connections along the Loudoun County Parkway corridor between Route 7 and the Dulles Greenway. This route has the potential to serve community and employment centers as they develop along this corridor, but exact routing to best serve these centers will require careful crafting over time. In Phase II, this route would extend to the Wiehle Avenue Metrorail station to function as a connector both for residents wishing to access Metrorail and reverse-commute service for employment centers along the corridor up to Route 7. The route is designed for all-day service at 15-minute headways in Phase II but may need to be reduced if ridership falls off in Phase III as forecast, or the route could be combined with the Pacific Circulator to form a loop.

Potential Advantages:

- Provides frequent service through a corridor that is anticipated to have both residential and commercial centers.

Potential Challenges:

- In Phase III, the route productivity falls off as Metrorail becomes more accessible to residents of the corridor at Moorefield Station.

Synopsis:

Originally examined as a Phase I route extending to Arcola, this route would be best implemented in Phase II when it can be connected to Metrorail at Wiehle Avenue. The appeal of a bus service extending to Metrorail in Fairfax County appears high in Phase II, but in Phase III when Metrorail service becomes available at Moorefield Station, the desirability of the route wanes. Passenger surveys will need to be conducted during Phase II to determine the most productive type of service to offer in Phase III.

Note: Modeling of commuter bus ridership is highly sensitive to travel times and was not constrained by the number of park and ride spaces in commuter lots. As a result, projections within a corridor having multiple lots may appear high in one location and low in another (ex: Purcellville and Leesburg along Route 7 or Ashburn North and Dulles North along Route 28). In reality, ridership distribution among lots would likely be more balanced and/or subject to rider preferences and habits that may not relate to travel times.



Transit Recommendations Profile

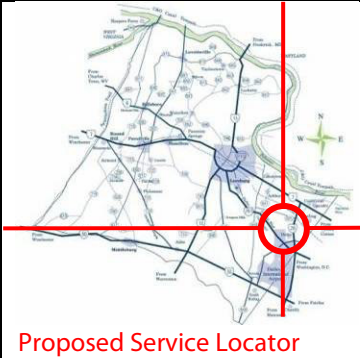
Pacific Circulator

Type: Fixed Route Service

Implementation Phase: Phase II

Service Area Population: 25,457 w/in ½ mi. of proposed route

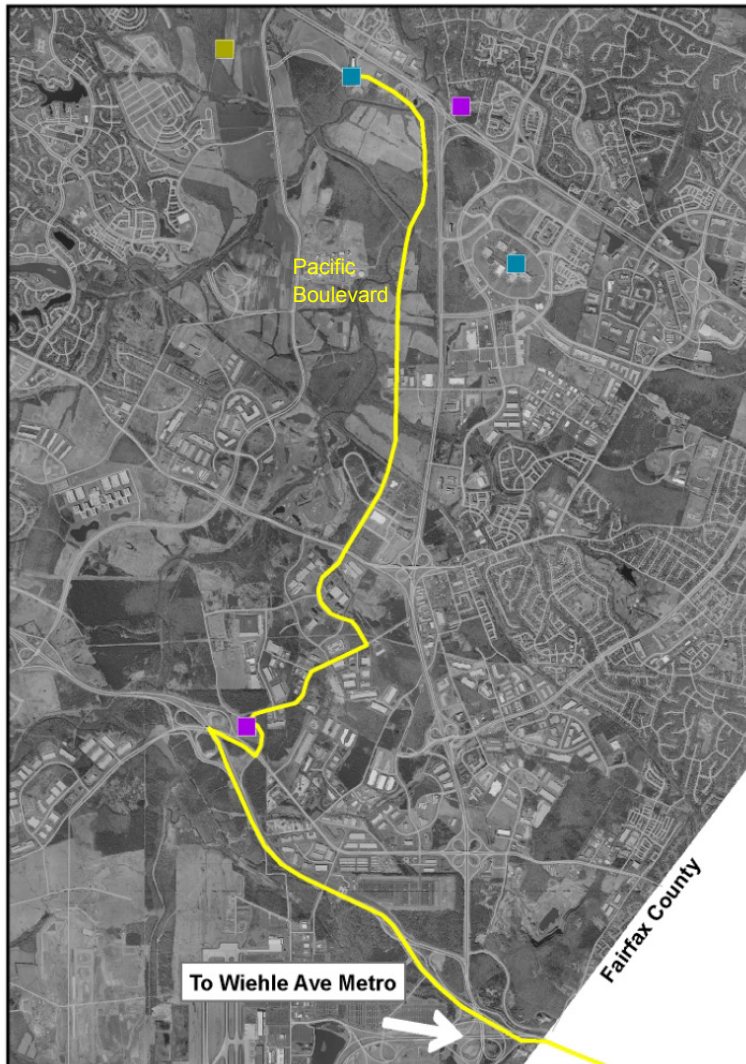
Est. Phase II Annual Operating Cost: \$515,000



Proposed Service Locator

| PERFORMANCE DATA | Phase I | Phase II | Phase III |
|---------------------------|---------|----------|-----------|
| Projected daily ridership | n/a | 300 | 370 |
| Passengers per hour | n/a | 10.1 | 15.3 |
| Net cost per passenger | n/a | \$5.26 | \$3.07 |

Conceptual Routes/
Park and Ride Lots



Description:

This service offers a peak period commuter-oriented service between the Dulles Metrorail stations and Route 7 along the west side of the Route 28 corridor. Peak period frequencies will operate every 15 min., providing reverse commute access from transfers at the Dulles North Transit Center into the business park developments along Pacific Boulevard. The route should be designed to serve major employment complexes along the general corridor, which may result in some deviations from Pacific Boulevard. Adjustments may also be needed over time as roads, including Pacific Boulevard and Russell Branch Parkway, are completed. This route would be introduced in Phase II with an extension along the Dulles Greenway/Toll Road corridor to the Wiehle Avenue Metrorail station. In Phase III, this route would connect with the Route 606 Metrorail station, also linking with cross-county commuter routes at that location.

Potential Advantages:

- Additional option to meet increased reverse-commute travel demand to this region as existing and planned development occur in this corridor.

Potential Challenges:

- Timing the introduction of the route may be tricky and will depend on the development of employment centers at sufficient densities to be served by transit in the corridor.

Synopsis:

This route, in combination with the Atlantic Circulator provides reverse-commute service for Dulles Metrorail riders to employment centers along the Route 28 corridor. The existing Reverse Commute route can be phased out when this service is well-established, pending ridership survey results indicating Reverse Commute riders will access this area via Dulles Metrorail and a local bus route. As with Atlantic Circulator, outreach to determine if mid-day runs are also needed should be conducted once the peak period service is established. In Phase III, this route could be combined with the Loudoun County Parkway Circulator in a loop service.

Note: Modeling of commuter bus ridership is highly sensitive to travel times and was not constrained by the number of park and ride spaces in commuter lots. As a result, projections within a corridor having multiple lots may appear high in one location and low in another (ex: Purcellville and Leesburg along Route 7 or Ashburn North and Dulles North along Route 28). In reality, ridership distribution among lots would likely be more balanced and/or subject to rider preferences and habits that may not relate to travel times.



Transit Recommendations Profile

Dulles South Circulator

Type: Fixed-Route Service

Implementation Phase: Phase III

Service Area Population: 22,148 w/in ½ mi. of proposed route

Est. Phase III Annual Operating Cost: \$180,000

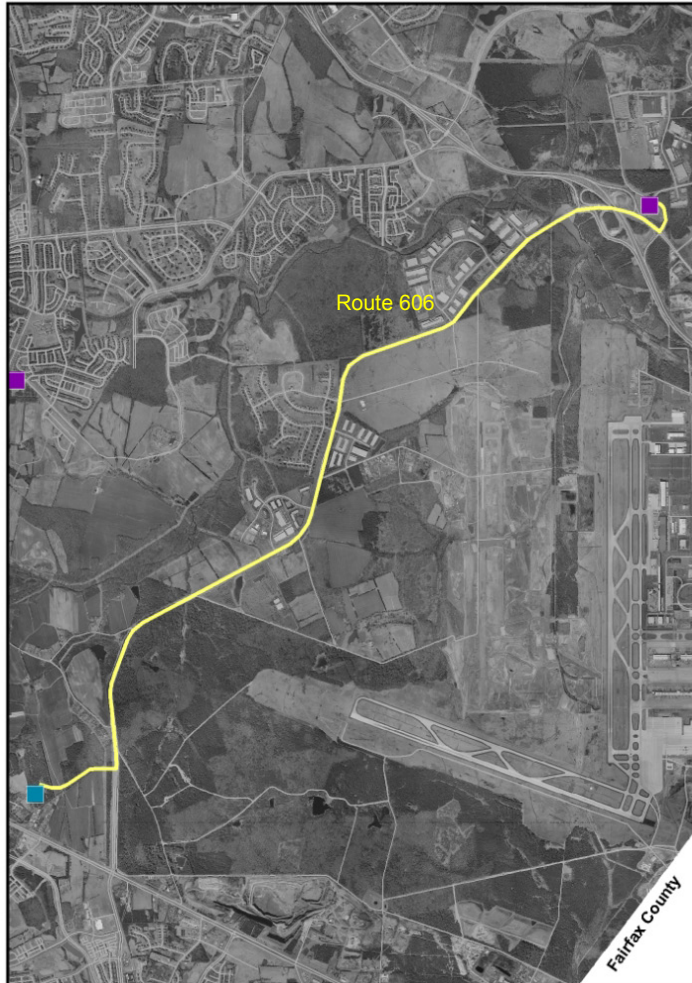


Conceptual Routes/
Park and Ride Lots



Proposed Service Locator

| PERFORMANCE DATA | Phase I | Phase II | Phase III |
|---------------------------|---------|----------|-----------|
| Projected daily ridership | n/a | n/a | 100 |
| Passengers per hour | n/a | n/a | 9.7 |
| Net cost per passenger | n/a | n/a | \$5.54 |



Description:

This route provides connections along Route 606 between the Arcola park and ride lot and the Dulles North Transit Center. This route has the potential to serve community and employment centers as they develop along this corridor, but exact routing to best serve these centers will require careful crafting over time, particularly as Route 606 is improved and access may change. This route is designed to provide access to Metrorail and county transit services to an area that otherwise lacks density for fixed route transit service. Planned headways are 60 minutes; if the route proves more successful than forecasted, shorter headways should be considered.

Potential Advantages:

- Provides access to the Dulles South area through a corridor that is forecasted to be congested, thus providing a mobility option to Dulles South residents seeking access to Metrorail and other county transit services.

Potential Challenges:

- As Route 606 congestion and adjacent development advance over time, alternative routing should be examined both for efficiency and for potential to serve additional riders.

Synopsis:

A fairly expensive route on a per-rider basis, but it provides access that is otherwise lacking to the Dulles South area. The route may have some reverse-commute potential along Route 606 as employment centers develop - routing should be examined closely to determine if this potential exists, particularly in light of the availability of Metrorail at the northern route terminus.

Note: Modeling of commuter bus ridership is highly sensitive to travel times and was not constrained by the number of park and ride spaces in commuter lots. As a result, projections within a corridor having multiple lots may appear high in one location and low in another (ex: Purcellville and Leesburg along Route 7 or Ashburn North and Dulles North along Route 28). In reality, ridership distribution among lots would likely be more balanced and/or subject to rider preferences and habits that may not relate to travel times.



Transit Recommendations Profile

Lansdowne Commuter

Type: Commuter Bus

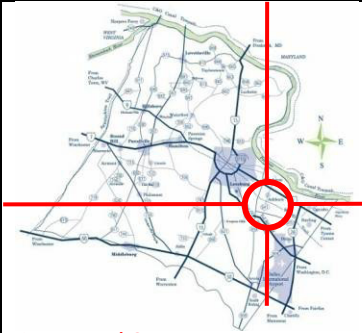
Implementation Phase: Phase III

Service Area Population: 66,391 w/in 5 mi. of proposed stations

Est. Phase III Annual Operating Cost: \$1,409,000

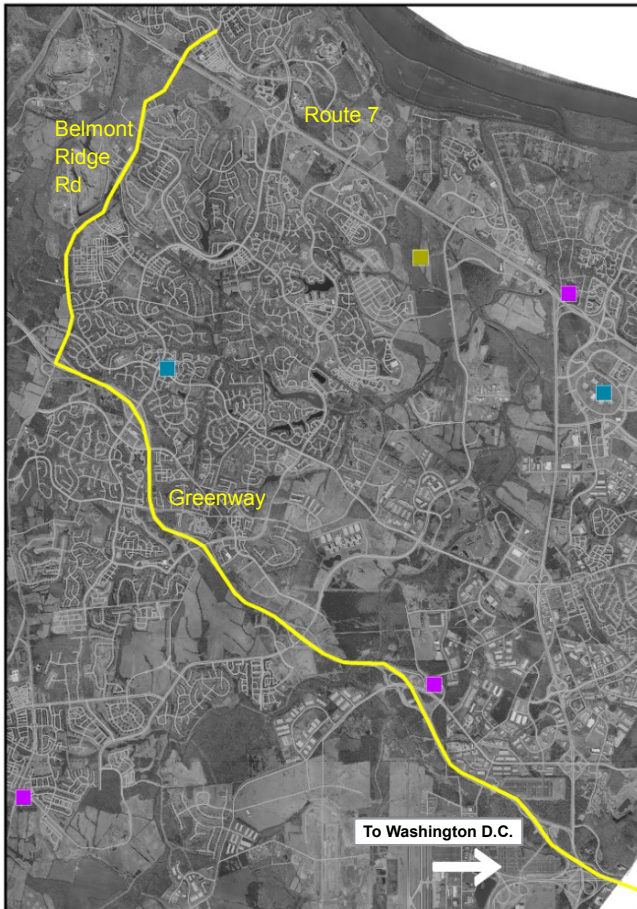


Conceptual Routes/
Park and Ride Lots



Proposed Service Locator

| PERFORMANCE DATA | Phases I & II | Phase III* |
|---------------------------|---------------|------------|
| Projected daily ridership | n/a | 450 |
| Passengers per hour | n/a | 17.7 |
| Net cost per passenger | n/a | \$0.83 |



Description:

This route provides a connection from a park and ride location near Belmont Ridge Road and Route 7, with service extending south on Belmont Ridge Road to the Dulles Greenway. Service then continues from this location to Washington, D.C. As with the proposed Ashburn North service, this route captures ridership from locations north of Route 7 in the central portion of this corridor. The direct connection to Washington, D.C. reflects the travel time savings anticipated from this service versus a short feeder connection to the Moorefield Metrorail Station. A total of six (6) AM and six (6) PM trips are proposed, with a total travel time of 126 minutes anticipated.

*Phase III represents the scenario with self-sustaining fares and service to Washington, D.C.

Potential Advantages:

- Spreads continued ridership demand for commuter bus transit services across a different route, providing closer pick-up locations for passengers.

Potential Challenges:

- Service depends on a new park and ride lot the location of which is not yet identified.
- Suitability for commuter bus travel along Belmont Ridge Road.

Synopsis:

Both this route and the existing Leesburg commuter services show significant projected ridership growth, indicating the need for different routings and new park and ride options to avoid overwhelming existing routes.

Note: Modeling of commuter bus ridership is highly sensitive to travel times and was not constrained by the number of park and ride spaces in commuter lots. As a result, projections within a corridor having multiple lots may appear high in one location and low in another (ex: Purcellville and Leesburg along Route 7 or Ashburn North and Dulles North along Route 28). In reality, ridership distribution among lots would likely be more balanced and/or subject to rider preferences and habits that may not relate to travel times.



Transit Recommendations Profile

One Loudoun Commuter

Type: Commuter Bus

Implementation Phase: Phase III

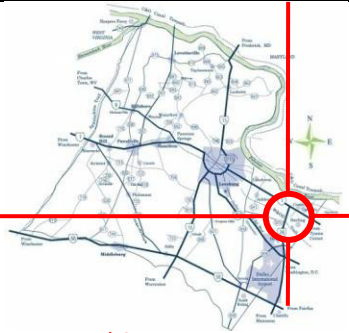
Service Area Population: 35,767 w/in 5 mi. of proposed stations

Est. Annual Operating Cost: \$887,000

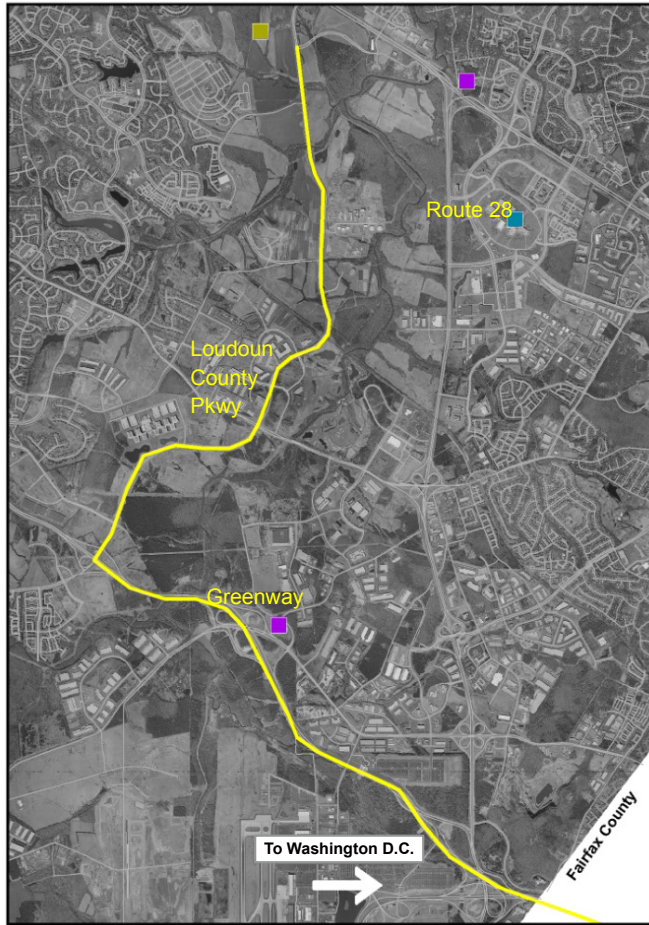
| PERFORMANCE DATA | Phases I & II | Phase III* |
|---------------------------|---------------|------------|
| Projected daily ridership | n/a | 290 |
| Passengers per hour | n/a | 18.4 |
| Net cost per passenger | n/a | \$0.35 |



Conceptual Routes/
Park and Ride Lots



Proposed Service Locator



Description:

This route specifically serves proposed development at Route 7 and the Loudoun County Parkway but would also provide park and ride availability to the Ashburn area. Service would continue south along the Parkway to the Dulles Greenway, with a continued direct connection to Washington, D.C. A total of four (4) AM and four (4) PM runs with a travel time of 114 minutes is proposed in the service plan for this route. This service focuses specifically on the commuter market from this location, with expanded fixed route coverage providing circulator routes to feed and distribute trips.

*Phase III represents the scenario with self-sustaining fares and service to Washington, D.C.

Potential Advantages:

- Potential location in or proximate to higher density residential development could increase non-auto access to the route

Potential Challenges:

- Availability of park and ride space may be challenging in this area
- Ridership forecasts suggest this is a lower priority location than Ashburn North and Lansdowne in this corridor

Synopsis:

This route is designed to add to the capacity for park and ride based trips to Washington, D.C., with the added advantage of increased local accessibility from a higher-density residential development within One Loudoun. However, the viability of the route independent of the other proposed routes along Route 7 (Ashburn North and Lansdowne) should be considered and this alternative should be pursued on the basis of park and ride lot opportunity; otherwise it would be a lower priority than the other routes.

Note: Modeling of commuter bus ridership is highly sensitive to travel times and was not constrained by the number of park and ride spaces in commuter lots. As a result, projections within a corridor having multiple lots may appear high in one location and low in another (ex: Purcellville and Leesburg along Route 7 or Ashburn North and Dulles North along Route 28). In reality, ridership distribution among lots would likely be more balanced and/or subject to rider preferences and habits that may not relate to travel times.



II. Existing Routes – Performance Data

Transit Route Profile – Existing Routes

Purcellville Connector

Type: Local Fixed Route

Est. Phase I Annual Operating Cost: \$164,000

| PERFORMANCE DATA | Phase I | Phase II | Phase III |
|---------------------------|---------|----------|-----------|
| Projected daily ridership | 100 | 80 | 110 |
| Passengers per hour | 4.8 | 3.6 | 5.3 |
| Net cost per passenger | \$4.99 | \$7.04 | \$4.38 |

Transit Route Profile – Existing Routes

Cascades

Type: Commuter Route, Reclassified as Express Route beginning in Phase I

Est. Phase I Annual Operating Cost: \$330,000

| PERFORMANCE DATA | Phase I | Phase II | Phase III |
|---------------------------|---------|----------|-----------|
| Projected daily ridership | 320 | 610 | 640 |
| Passengers per hour | 25.2 | 29.8 | 35.0 |
| Net cost per passenger | \$2.17 | \$1.61 | \$1.11 |

Transit Route Profile – Existing Routes

Purcellville

Type: Commuter Route

Est. Phase I Annual Operating Cost: \$1,230,000

| PERFORMANCE DATA | Phase I | Phase II | Phase III* |
|---------------------------|---------|----------|------------|
| Projected daily ridership | 580 | 150 | 290 |
| Passengers per hour | 18.2 | 15.4 | 18.2 |
| Net cost per passenger | \$5.08 | \$7.29 | \$0.50 |

Transit Route Profile – Existing Routes

Hamilton

Type: Commuter Route

Est. Phase I Annual Operating Cost: \$1,280,000

| PERFORMANCE DATA | Phase I | Phase II | Phase III* |
|---------------------------|---------|----------|------------|
| Projected daily ridership | 430 | 120 | 450 |
| Passengers per hour | 17.3 | 13.7 | 18.0 |
| Net cost per passenger | \$5.73 | \$9.08 | \$0.62 |

* Phase III represents self-sustaining fare option for commuter service



Transit Route Profile – Existing Routes

Leesburg

Type: Commuter Route

Est. Phase I Annual Operating Cost: \$640,000

| PERFORMANCE DATA | Phase I | Phase II | Phase III* |
|---------------------------|---------|----------|------------|
| Projected daily ridership | 170 | 460 | 320 |
| Passengers per hour | 14.8 | 18.9 | 16.0 |
| Net cost per passenger | \$7.86 | \$4.62 | \$2.18 |

Transit Route Profile – Existing Routes

Dulles North

Type: Commuter Route

Est. Phase I Annual Operating Cost: \$1,130,000

| PERFORMANCE DATA | Phase I | Phase II | Phase III* |
|---------------------------|---------|----------|------------|
| Projected daily ridership | 160 | 390 | n/a |
| Passengers per hour | 7.7 | 19.2 | n/a |
| Net cost per passenger | \$21.65 | \$4.47 | n/a |

Transit Route Profile – Existing Routes

Dulles South

Type: Commuter Route

Est. Phase I Annual Operating Cost: \$847,000

| PERFORMANCE DATA | Phase I | Phase II | Phase III* |
|---------------------------|---------|----------|------------|
| Projected daily ridership | 530 | 1,760 | 419 |
| Passengers per hour | 22.6 | 23.0 | 19.6 |
| Net cost per passenger | \$2.74 | \$2.56 | (\$0.36) |

Transit Route Profile – Existing Routes

Reverse Commute

Type: Commuter Route, to be phased out as Local Fixed Routes replace service

Est. Phase I Annual Operating Cost: \$433,000

| PERFORMANCE DATA | Phase I | Phase II | Phase III* |
|---------------------------|---------|----------|------------|
| Projected daily ridership | 140 | n/a | n/a |
| Passengers per hour | 8.34 | n/a | n/a |
| Net cost per passenger | \$10.24 | n/a | n/a |

*Phase III represents self-sustaining fare option for commuter service



III. Ranking of New and Modified Transit Routes

The following summary is a composite ranking based on Phase I performance data for new and modified routes. This ranking may be useful to establish the priority of implementing routes.

| | Projected Daily Ridership Rank | Productivity Rank* | Net Cost Per Passenger Rank | Transit- Dependent Passengers | New Park & Ride Cost | Final Rank |
|-----------------------------|---|-----------------------|--------------------------------------|-------------------------------------|----------------------------|---------------|
| Ashburn North Commuter | 1 | 2 | 1 | | | 1 |
| Sterling Circulator | 2 | 8 | 3 | Yes | | 2 |
| Sterling/Potomac to Fairfax | 3 | 11 | 13 | Yes | | 2 |
| 7 to 7 on 7 | 5 | 13 | 9 | | | 4 |
| Route 28 to Manassas | 11 | 1 | 2 | | | 5 |
| Dulles Town Ctr to Fairfax | 4 | 4 | 12 | | | 6 |
| Dulles N to Fairfax | 7 | 3 | 11 | | | 6 |
| Ashburn Village Connector | 12 | 10 | 5 | | | 8 |
| Ashburn Farm Shuttle | 13 | 7 | 7 | | | 9 |
| Atlantic Circulator | 10 | 12 | 8 | | | 10 |
| Cross-County Connector | 6 | 6 | 6 | | Yes | 11 |
| Route 15 North Commuter | 9 | 5 | 4 | | Yes | 12 |
| Route 9 Connector | 8 | 9 | 10 | | Yes | 13 |

Productivity rank is based on the ratio of the passengers per hour to the productivity benchmark of 10 passengers per hour for local and express routes and 20 passengers per hour for commuter routes. Routes are ranked based on exceeding or meeting the benchmark.



Appendix 5

Transit Analysis

The Transit and Mobility Options Chapter of the *2010 Countywide Transportation Plan* for Loudoun County was developed under the guidance of a Transit Plan Advisory Committee (TPAC) that was appointed by the Board of Supervisors. The TPAC included representatives of each election district, the incorporated towns, and several interest groups such as the elderly, transit users and transit providers. The plan is a long-range transit plan with three phases: Phase I represents service recommendations in the near-term, before Metrorail is extended to the Reston area of Fairfax at Wiehle Avenue, Phase II represents the mid-term when Metrorail would be in service to Wiehle Avenue, and Phase III represents the long-term period up to 2030 when Metrorail would be in service to Loudoun County with stops at Dulles Airport, Route 606 and Route 772.

I. Public Input

Input to the transit plan from the general public was obtained through a project website page that allowed general comments to be submitted electronically and through a public workshop that was held in September, 2008. At the workshop, comment cards were provided at two different stations to solicit input on the transit needs and preliminary concepts for new and improved transit services. Additional outreach was conducted with the senior population through a series of meetings in senior centers, including a survey of seniors' transit needs.

The TPAC met three times to provide input on transit and mobility issues, guiding principles for the transit plan, transit needs/recommendations, and criteria for evaluating transit recommendations in the plan. The development of the transit plan also included on-board surveys, an assessment of existing services, and a market analysis, which were provided for review on the transit plan project website and presented to the TPAC. The guiding principles for the Loudoun County Transit Plan represent the vision of the TPAC and some specific objectives for transit service in Loudoun County in the future.

Based on these comments, service requests were identified that can be generalized as:

- Service to employment centers in eastern Loudoun and western Fairfax
- Service to Fairfax hubs and destinations
- More activity centers served in Sterling/Potomac
- Better service options in western Loudoun
- More service in the growing Dulles South area

II. Alternatives Analysis

Based on the review of existing services, the market analysis, and the input from the TPAC and the public, three types of services were tested:

- Local fixed route services were tested that consist of routes that run all day long with stops available throughout the route, such as every ¼ mile or less, and using the passenger van type of vehicle currently employed by Virginia Regional Transit (VRT) (capacity of 16 seated passengers) except where greater capacity would be needed. Several of these routes would have extended service hours daily and/or on the weekend.



- Express routes would be a new type of service with limited stops, using higher speed facilities between stops where possible, and offered primarily during peak commuting periods Monday through Friday. These routes are focused on providing linkages from eastern Loudoun County to Fairfax County destinations along the Dulles Greenway/Dulles Toll Road. Vehicles would be traditional urban buses with greater capacity (39 seated passengers), typical of Fairfax Connector or WMATA bus services.
- Commuter services such as the long-haul services provided today on coach-style buses (capacity of 55 seated passengers), were tested from new park and ride facilities. The new routes originating from park and ride lots in western Loudoun County would serve both resident and non-resident commuters destined for Loudoun County; therefore these routes have stops in Loudoun County where passengers could connect to local routes serving employment centers, and these departing passengers would create an opportunity for other passengers to board for the remainder of the trip. Some of the new routes would follow the existing routes to Washington, D.C., while others would interline with the Express routes and provide service to Fairfax County destinations along the Dulles Toll Road (i.e., Herndon/Monroe, Reston and Tysons Corner).
- A fourth type of route – an inter-county route that was tested on Route 28 and that appears to serve markets spanning Prince William, Fairfax and Loudoun Counties – also appears to have merit.

A set of route options for each phase of the transit plan was developed, presented in a public meeting, and refined based on public comment prior to modeling the route options. The options reflected the following concepts:

- Extending/modifying existing routes to potential new market areas.
- Extending hours of service, in some cases to create local bus-to-commuter bus connections, and potentially adding some limited weekend service.
- Express bus service to Fairfax County destinations along the Dulles Toll Road in Phase I, to be scaled back as feeders of Metrorail service in Phases II and III.
- Commuter bus service focused on linking inbound commuters to Loudoun County from the west and north with local routes in Leesburg and Dulles North Transit Center where connections to local employment centers can be made. (Note that this is an outcome of the Countywide Transportation Plan update public outreach from 2007 and was not specifically requested during public outreach for the transit plan.)
- New long-haul commuter routes from additional park and ride lots projected to be needed to serve Loudoun residents in the future.
- Adding services linking Loudoun residents to additional commuter options such as MARC train in Brunswick, MD and VRE train in Manassas, VA

In Phase II, minor modifications to the routes would take place, where appropriate, to truncate service at the Wiehle Avenue Metrorail station in Reston. In Phase II as well as Phase III, additional local routes would be added to connect with the Metrorail stations and feed passengers to/from the development areas of eastern Loudoun County such as the Route 28 corridor, facilitating reverse commuting to Loudoun County via Metrorail.

In Phase III, two options were considered. One option retains the long-haul commuter bus services to Washington, D.C. at a fare that would enable the service to support itself without county and state subsidy. The other option would treat the commuter routes as feeders from county park and ride lots to Metrorail stations in Loudoun County or nearby in Fairfax County.

The travel demand model used for analysis is a new version of the MWCOG regional travel demand model (or TPB model, version 2.3) that includes an enhanced capability to model transit modes as an integral part of a regional



transportation network and reflecting the impacts of land use patterns and travel times on mode choice. The model was validated for the base year, 2005, with observed transit ridership data for Loudoun County and was found to perform well, with margins of error that are well within acceptable standards for this type of analysis.

Because the model was validated for 2005, the changes in transit travel that occurred in 2008 due to gasoline prices rising and falling and the weakening national economy were not reflected in the model forecasts. Many U.S. regions observed a rise in transit ridership that was partially sustained after gasoline prices fell in the fall of 2008, due in part to a change in preference that transcended economic decisions and due in part to the weakening economy. This trend was observed in Loudoun County as well. To account for this adjustment in behavior, the ridership forecasts for commuter services were adjusted based on the observed increase in ridership from October, 2007 to October, 2008. This type of adjustment was not applicable to the local routes due to the modifications and/or addition of parallel routes that changed ridership patterns across the modeled local fixed route services; however, observed ridership data were incorporated in the analysis where appropriate to reflect the most current conditions. Nevertheless, the forecasts appear conservative and the alternatives analysis took this into account in identifying routes to eliminate or modify.

With the adjustments noted above, routes were evaluated on the following basis for productivity:

- Local Fixed Routes – minimum of 5 passengers per hour; goal of at least 10 passengers for hour
- Express Routes – minimum of 10 passengers per hour
- Commuter Routes – minimum of 20 passengers per hour (which, based on run times, translates to about 40 passengers per bus)

These benchmarks are derived from a variety of sources including peer system review. The average passengers per hour for the Loudoun local fixed routes is 7.3 and the benchmarks used represent approximately +/- 1/3 of the average. Peer systems range from 6.6 to 8.2 passengers per hour. Express service is not currently offered in Loudoun County, but based on other systems, a threshold of 10 appears reasonable. The threshold of 20 passengers per hour for commuter routes was based on observed performance of the commuter bus system which compares favorably with peer systems. Some exceptions to these thresholds were made where service is provided to a concentration of transit-dependent populations and/or provides a mode choice in a congested corridor. In several cases, under-performing routes were combined with other routes to determine if a single, more successful route would warrant recommendation. In several cases, these combinations appeared to result in successful service options. After screening for productivity, with the exceptions noted, the routes were evaluated for operational costs and anticipated net costs after fare collection. This measure was also examined to confirm or identify further refinements needed to the route recommendations. Details of the fare and cost assumptions follow.

The route profiles at the end of this chapter provide the information used to rank the Phase I route recommendations after the routes were screened as described above. The ranking was based on the following approach:

- 1) Composite ranking within service type based on total ridership, route productivity, and net passenger trip cost.
- 2) Transit-dependent service: rank elevated if route focused on transit-dependent populations
- 3) Capital outlay: rank reduced if route depends on up-front capital expense for a park and ride lot that is not already planned.

The analysis does not include the local routes provided in Leesburg. The plan assumes that the local transit services will continue in Leesburg, and recent recommendations provided by the Town indicate that these services will be expanded in the future, for example to include a route along Battlefield Parkway. These routes are assumed to



continue but are not included in the analysis of County transit services. The routes do receive subsidy from the County as well as the Town, but the Town is responsible for the planning and management of these routes.

III. Costs Assumptions and Implementation

Key Forecast Assumptions describes the assumptions made that shape the financial results. Key assumptions include the companies or contractors that would operate specific services (e.g., commuter, local, express, demand response), the vehicle type that would be used, and the assumed operating cost rates.

Service Cost Projections presents the financial forecasts of the annual riders, fare revenues, operating costs, and bus capital costs for the three phases of the Transit Plan.

Supporting Capital Needs outlines other capital purchases needed to support the Transit Plan.

Sources of Funding describes the existing and potential sources of funding for the Transit Plan.

Financial Implications summarizes the implications of the financial forecasts on current sources of funding and the needs for new sources.

A. Key Forecast Assumptions

The financial forecasts are based on key assumptions regarding transit demand and the costs of providing public transportation. The demand forecasts relied on the regional travel demand model, with some adjustments to reflect observed transit travel. The cost forecasts are based on current operating experience in Northern Virginia.

The transit demand forecasts for the proposed fixed-route bus services were made using the regional travel demand model maintained for the Washington metropolitan area by the Metropolitan Washington Council Governments (MWCOC) as discussed in Chapter 4. The transit demand forecasts for the proposed demand responsive transit services are based on the current performance of the existing demand responsive services operated in Loudoun County. The demand responsive forecasts should be taken using great judgment and might be considered “ball-park” estimates.

The cost forecasts are based on current operating experience in Northern Virginia. The key cost assumptions concerned:

- ◆ **The contractor or agency that would operate the service.** Depending on the type of service proposed, either a private contractor, such as Veolia, or Virginia Regional Transit (VRT) was assumed to be the operator. VRT is the designated rural provider for Loudoun County and is eligible to receive rural funding from the Virginia Department of Rail and Public Transportation (DRPT).
- ◆ **The operating and bus capital costs of the service, expressed in cost per revenue hour.** A revenue hour is the time that a bus is in-service and available to carry passengers. The revenue time corresponds to the time shown on public transit timetable. It does not include the time a bus travels to and from the beginning or end of the bus route.
- ◆ **The fare levels charged to users.** These fares generally were set at current fare levels, with exceptions noted.
- ◆ **The rate of urban development in Loudoun County.** There are separate state and federal transit funding programs for routes serving urban and rural areas. The rate of development in Loudoun will affect the funding that VRT can obtain based on their existing rural provider status. This rate of development can ultimately affect the funding that will be required from Loudoun County.



The rationales for the key assumptions are provided in following sections organized by service type — local, express, commuter, and demand response.

1. Local Fixed Route Service Assumptions

Virginia Regional Transit (VRT) is a not-for-profit Virginia corporation that is partially funded by Virginia Department of Rail and Public Transportation (DRPT) to provide rural public transportation in Loudoun County. The funding provided by DRPT is a mixture of state funding and federal funding that is administered by DRPT.

The DRPT funding covers a significant portion, but not all of VRT's operating and bus capital costs. VRT also generates revenues through efforts such as bus advertising, and leasing of garage space. However, VRT also must obtain local funding to support its operations. Every year, VRT requests and receives funding from Loudoun County and the Town of Leesburg to support the operation of the VRT services in Loudoun County.

For fiscal year 2009, Loudoun County paid \$972,705 from the local gasoline tax fund to support the VRT operations. From projections provided by VRT, the rate that Loudoun County will pay was estimated at \$25.62 per revenue hour for the VRT service in 2009.

Table A5-1: VRT Operating and Capital Costs

| | Cost per Revenue Hour | Percent of Total VRT Cost |
|--------------------------------------|----------------------------------|--------------------------------------|
| VRT Operating Cost | \$59.00 | 90.6% |
| Estimated VRT Capital Cost | \$6.13 | 9.4% |
| Total VRT Cost | \$65.13 | 100.0% |
| Estimated Loudoun County Funded Cost | \$25.62 | 39.3% |

Note: Operating cost is provided in data submitted by VRT. The estimated capital cost uses the unit price and service life provided by VRT and then applied to Loudoun County routes.

The total VRT costs are much higher than the \$25.62 paid by the County. VRT provided budgeting information that shows that its operating costs are \$59.00 per revenue hour (**Table A5-1**). In addition, VRT's capital costs are estimated to add \$6.13 per revenue hour based on operating buses with a purchase price of \$60,000 and a useful life of four years. Therefore, Loudoun County pays approximately 40 percent of the total cost of the service provided for County residents by VRT.

For the long-range plan, it is assumed that VRT will continue to operate a majority of the local services, both existing and proposed. However, different costs rates are assumed for VRT in the three phases of the plan.

The validity of the cost rate assumptions for VRT depend on how fast the Washington urbanized area will grow into Loudoun County. This is important because there are separate state and federal transit programs for urban transit routes (travel predominately in urbanized areas) and rural transit routes (travel predominately outside of an urbanized area). The current VRT-operated services are predominately rural, although some routes (e.g., 7 to 7 on 7) serve urban trip needs.

VRT has been very successful in obtaining state and federal support for its services including some urbanized funding for its urban routes. It has been able to balance the various local matching requirements for operating and capital that range from 5 to 50 percent. A shift in the balance of urban and rural services can impact the need for local funding. It is not clear how VRT would be funded for service it would operate wholly within the urbanized area.



Underlying this cost is the assumption that most of Loudoun County will continue to be classified as rural after the 2010 Census is completed. It is assumed in this financial analysis that VRT will continue as it operates now in Phases I and II and that the cost to Loudoun County will be \$30 per revenue hour (**Table A5-2**). This cost is higher than the current cost to reflect some uncertainty.

Table A5-2: Key Local Fixed Route Assumptions

| Phase | Operator | Cost per Revenue Hour | | | Bus | | Passenger Fare |
|---------------|----------|-----------------------|-------------|---------|------------|---------------|----------------|
| | | Operating | Bus Capital | Total | Unit Price | Life in Years | |
| Local Service | | | | | | | |
| I, II | VRT | Not Determined | | \$30.00 | \$60,000 | 4 | \$1.25 |
| III | VRT | \$59.00 | \$7.00 | \$66.00 | \$60,000 | 4 | \$1.25 |

In Phases I and II, Loudoun County would pay what VRT charges after state and other subsidies rather than actual cost. Note that two Phase III alternatives were modeled, but VRT costs do not vary between these alternatives.

It is assumed that there will be significant growth between 2010 and 2020 and that most of the County will become part of the Washington urbanized area after the 2020 Census is completed. It is further assumed that VRT will not be able to obtain state and local funding for the services operated within the urbanized areas. In the two Phase III scenarios, a conservative assumption is made that Loudoun County will be required to pay the full cost of VRT operations at a cost of \$66.00 per revenue hour (**Table A5-2**).

The assumed one-way fare for local service is assumed to be \$1.25. This is an increase from the current fare of \$0.50, but is more consistent with fares charged in other Washington suburban counties such as Fairfax County.

2. Express Service Assumptions

The proposed express bus routes will provide longer-distance service for Loudoun County residents to major employment centers and rail service in Loudoun County and nearby Fairfax County. These routes are modeled as limited-stop services that are operated using conventional urban transit buses. It is assumed that a private contractor will be procured to operate this service.

The assumed cost rate of \$100 per revenue hour for the express service (**Table A5-3**) is based on the current experience in the Washington area, particularly adjoining Fairfax County. It should be noted that this rate is higher than the rates assumed for the VRT local services for two reasons: 1) the use of a more expensive, but higher-capacity traditional transit bus and 2) higher operating costs stemming from reduced fuel economy and higher driver wages.

Table A5-3: Key Express Service Costing Assumptions

| Phase | Operator | Cost per Revenue Hour | | | Bus | | Passenger Fare |
|-----------------|------------|-----------------------|-------------|----------|------------|---------------|----------------|
| | | Operating | Bus Capital | Total | Unit Price | Life in Years | |
| Express Service | | | | | | | |
| All | Contractor | \$82.00 | \$13.00 | \$100.00 | \$360,000 | 12 | \$3.00 |



3. Inter-County Service Assumptions

The proposed Inter-county service will provide long-distance service for Loudoun County residents to major employment centers and rail service in Fairfax and Prince William Counties. The route is modeled as a limited-stop service that uses conventional urban transit buses. It is assumed that a private contractor will be procured to operate this service.

The assumed cost rate of \$100 per revenue hour for the express service is based on the current experience in the Washington area. It is assumed that the operating and cost characteristics of this service are comparable to those of the proposed express services (**Table A5-4**).

Table A5-4: Key Inter-County Costing Assumptions

| Phase | Operator | Cost per Revenue Hour | | | Bus | | Passenger Fare |
|----------------------|------------|-----------------------|-------------|----------|------------|---------------|----------------|
| | | Operating | Bus Capital | Total | Unit Price | Life in Years | |
| Inter-County Service | | | | | | | |
| I, II | VRT | \$59.00 | \$7.00 | \$66.00 | \$60,000 | 4 | \$3.00 |
| III | Contractor | \$87.00 | \$13.00 | \$100.00 | \$360,000 | 12 | \$3.00 |

4. Commuter Service Assumptions

It is assumed that Loudoun County will continue to contract with a private contractor for service that operates from Loudoun County to Washington, D.C. The current Loudoun County operating and capital costs are shown in **Table A5-5** and provide the basis for the cost of \$220 per revenue hour for Phases I, II, and III Self Sustaining (**Table A5-6**). The estimated bus capital cost is higher for the commuter coaches than the express buses because of their relatively high purchase price (\$500,000). Administrative costs were included to cover the passenger information and oversight responsibilities provided by Loudoun County. The assumed cost of \$220 reflects the following adjustments to the 2008 Loudoun County costs:

- Increased contractor costs to reflect the contractual increases in 2009 plus an adjustment for the changes in revenue and deadhead hour (an example of deadhead hours is: a bus' travel between the end of service on one route to the beginning of another).
- Increased capital costs to reflect the bus replacement costs at current price levels.

Table A5-5: Loudoun County Operating and Capital Costs

| | Cost per Revenue Hour |
|----------------------------|-----------------------|
| Contractor | \$101.45 |
| Fuel Cost | \$32.87 |
| Administrative Cost | \$13.73 |
| Estimated Bus Capital Cost | \$47.40 |
| Total Loudoun County Cost | \$195.46 |

Note: These individual costs are based on analysis of data submitted for FY 2008 to the National Transit Database by Loudoun County.

**Table A5-6: Key Cost Assumptions for Commuter Service**

| Phase | Operator | Cost per Revenue Hour | | | Bus | | Passenger Fare |
|----------------------|------------|-----------------------|-------------|----------|------------|---------------|----------------|
| | | Operating | Bus Capital | Total | Unit Price | Life in Years | |
| Commuter Service | | | | | | | |
| I, II | Contractor | \$167.00 | \$47.00 | \$220.00 | \$500,000 | 12 | \$7.00 |
| III Self Sustaining | Contractor | \$167.00 | \$47.00 | \$220.00 | \$500,000 | 12 | \$11.60 |
| III Integrated Metro | Contractor | \$87.00 | \$13.00 | \$100.00 | \$360,000 | 12 | \$3.00 |

Note that two Phase III alternatives were modeled, “Self Sustaining” in which commuter bus fares were raised to a level that would fully pay for the services, and “Integrated Metrorail” in which the commuter routes were truncated at Loudoun County Metrorail stations

For Phase III Integrated Metrorail, the cost of \$100 per revenue hour is used for the financial projections. This lower cost is used because the commuter routes would be cut back to serve the Metrorail stations and would be more appropriately served by conventional transit buses.

The current fare of \$7.00 is assumed for Phases I and II. Different fares, however, are assumed for the two Phase III scenarios. A higher fare of \$11.60 is used for Phase III Self Sustaining because this is the estimated fare level at which the commuter bus services will break even and not require a subsidy. In Phase III Integrated Metrorail, a fare of \$3.00 is assumed, matching the fare structure of the Express services, which more closely resemble the service of linking park and ride lots to Loudoun County Metrorail Stations provided under this alternative.

5. Demand Response Assumptions

It is assumed that VRT will continue as the provider of current and proposed demand response services. Like the local services, it is assumed in this financial analysis that VRT will continue as it operates now in Phases I and II and that the cost to Loudoun County will be \$30 per revenue hour (**Table A5-7**). This cost is higher than the current cost to reflect some uncertainty. In the two Phase III scenarios, a conservative assumption is made that Loudoun County will be required to pay the full cost of VRT operations at a cost of \$66.00 per revenue hour (**Table A5-7**).

Table A5-7: Key Demand Response Service Costing Assumptions

| Phase | Operator | Cost per Revenue Hour | | | Bus | | Passenger Fare | |
|-------------------------|----------|-----------------------|-------------|---------|------------|---------------|----------------|--------|
| | | Operating | Bus Capital | Total | Unit Price | Life in Years | | |
| Demand Response Service | | | | | | | | |
| I, II | VRT | Not Determined | | | \$30.00 | \$60,000 | 4 | Varies |
| III | VRT | \$59.00 | \$7.00 | \$66.00 | \$60,000 | 4 | Varies | |

Note that two Phase III alternatives were modeled, but VRT costs would be the same for both. While there is a fare structure for this service, many passengers are eligible to receive discounts for age, disability, or other criteria.

The one-way average fare for local service is assumed to be \$0.65 net of discounts. This is the current average farebox recovery for demand response services operated by VRT, based on the actual use of a varied fare structure based on need and eligibility for subsidized fares.

6. Supporting Capital Needs

The bus capital costs are included in the service cost projections. In addition to buses, there are other capital items that Loudoun County should consider as bus service is expanded. At a minimum, Loudoun should implement the



following capital program that consists of 10 new park and ride lots and an annual program for installing bus stop signs and bus shelters.

Loudoun County also should continue its strategic efforts related to bus ownership and bus maintenance facilities. These efforts should address the differences between VRT and contractor operation of the services proposed in the plan.

7. Bus Costs and Ownership

The capital (purchase) costs of the buses required to implement the long-range plan are included in the service cost projections. The buses are assumed to be the same types of vehicles that are currently being operated using clean diesel fuel.

If more environmentally sensitive buses are used such as hybrid buses, capital costs can be expected to increase. Hybrid buses can cost up to \$500,000, a significant increase over standard diesel transit buses which are assumed to cost \$360,000 in this plan. Natural gasoline buses, a lower-emission alternative to conventional diesel transit buses, are generally \$20,000 to \$50,000 more than a diesel bus. The amount of operating savings from using alternatively-fueled vehicles depends on the operating conditions.

The buses now operated on the commuter routes are owned by Loudoun County. This is a common approach that is used by many local governments. It offers three important benefits:

- **The annual capital cost is minimized because the capital cost is spread (amortized) over the life of the vehicles.** The capital cost of the Loudoun commuter buses is spread over the 12-year life of the vehicles. If, instead, Loudoun County required its contractor to provide the buses, the contractor would likely include an annual capital cost in its bid that would be higher than the current Loudoun rate. In the worst case, the contractor would spread the entire cost over the life of the contract (e.g., five years) because the contractor would be unsure if it could make productive use of the vehicles after the contract is completed. In the best case, the contractor would charge a capital cost that reflects the difference between the purchase price and fair market value at the end of the contract. Since buses, like automobiles, experience high depreciation in the first few years of their lives, the capital costs even in the best-case scenario would be higher than if Loudoun owns the vehicles.
- **County ownership of the buses provides protection in case of contractor default.** If the current contractor defaults and cannot continue to operate service, the biggest problem is finding a replacement contractor who has available replacement vehicles. If the County owns the vehicles, it can usually find a willing contractor to come in and operate service immediately given that the contractor would not have to provide the required vehicles.
- **The County can take advantage of state capital funding and local development proffers to purchase the vehicles.** The Virginia DRPT provides funding for the purchase of capital assets including buses. This funding has covered from 22 to 80 percent of the purchase cost of the current County bus fleet over the past 5 years. In addition, proffer funding from Loudoun County developers also has been used to support bus purchases. In the past over \$100,000 has been used to purchase County buses and another \$230,000 is programmed for fiscal year 2010 bus purchases.

It is recommended that the County continue its policy of purchasing its own vehicles for the express and commuter services proposed in the long-range plan. This approach will minimize the County's bus capital costs and provide protection in case of contractor default.

The long-range plan does call for operating different buses on the commuter and express routes. The estimated number of vehicles to support the Phase III Self-Sustaining Fare scenario is 58 commuter buses and 9 express buses. This will require the maintenance of two separate inventories of replacement parts. While the maintaining two



supplies of parts is expensive, it is more than justified by the savings in capital costs between the commuter (\$500,000) and express (\$360,000) buses.

The buses on the local routes are now owned and operated by VRT. VRT can operate these vehicles over their entire useful life of four years because it has an ongoing relationship with the County. Therefore, the annual costs are minimized. It is recommended that this policy be continued because there is no apparent advantage in having the County purchase and own these vehicles.

8. Bus Stop and Shelter Program

The proposed transit routes involve the placement of nearly 600 bus stop signs and 15-20 bus shelters over the three phases of the transit plan. The bus stop sign program is based on the following guidelines:

- ◆ An average of four stop signs per route mile for local routes. Specific locations will be determined based on observed passenger boardings. Bus stop signs also will be placed at route terminal locations and key transfer points.
- ◆ Bus stop signs for express and commuter routes will be placed at the designated stops for the services.

It is recommended that the bus stop signs be implemented as an annual program over a 10 year period - a typical life for signs. This allows Loudoun County to locate the signs based on actual not estimated performance of the new and improved routes started in each phase of the transit plan. From a budgetary viewpoint, it spreads the costs of the program over many years instead of concentrating the expenditures in a few years. New signage would need to coincide with the introduction of new routes, with a minimum of one major stop on a new route being identified by a route marker. With several new local fixed route services focused on the initial years of this plan, the logical first locations for signage investment would be shared stops and transfer points between existing services and new routes.

A Bus Shelter Improvement Program for Loudoun County should consist of two main focus areas. The first area of focus would be on major corridors (Route 7, Route 28, etc.) where high passenger volumes may be anticipated. The second area of focus would be on future development, including the incorporation of bus facilities in planned new developments such as One Loudoun. For new development, a transit design review is recommended for all projects of significant size that will occur within the ½ mile buffer of proposed bus routes.

A shelter program should be explored that is cost neutral to the County, covering procurement, installation and maintenance aspects. There are several approaches that might be considered including:

- Virginia DRPT funding. The Virginia DRPT provides funding for the purchase of capital assets including shelters. The local match for these funds could be provided through shelter advertising revenues and developer proffers.
- Developer Proffers. As part of the approval process, the purchase, construction, and maintenance of shelters are negotiated to be provided by developers.
- Advertising revenues. The County could select a vendor to purchase, install, and provide the day-to-day maintenance of the shelters. The funding for the vendor's activities would be generated through the sale of advertising in the shelters. Incentives might be provided to share advertising revenues that exceed the costs of shelter construction and maintenance with the vendor.

B. Financial Implications

In fiscal year 2008, passenger fare revenues paid for \$3.7 million of the \$7.2 million that Loudoun County expended on its commuter and reverse commute services. The majority of the remaining costs were paid for by the gasoline tax fund (\$1.8 million) and the state transit program (\$1.6 million).



In addition, the County paid for about \$800,000 of the costs of VRT local services (including some of the Town of Leesburg services). This was the net funding requirement for VRT local services and not the total VRT operating costs. Loudoun County presently pays approximately 40 percent of the total cost of the service provided for County residents by VRT.

The projected annual service costs (Table 5-8) for the three phases of the plan suggest that there is sufficient gasoline tax funding to support Phases I (funding need = \$6.4 million) and II (funding need = \$8.1million). These needs are within the total funding available from the gasoline tax fund and state transit programs.

However, the gasoline tax fund will not be able to support either of the Phase III scenarios. In Phase III, Metrorail service will be extended into Loudoun County. At that time, Loudoun County will be required to pay its portion of the WMATA rail operating deficit. The Loudoun subsidy is estimated to be \$8.0 million (2015 year of expenditure dollars), almost the current funding derived from the gasoline tax fund. This means that if either of the Phase III scenarios is implemented, new funding to support bus transit must be found.

Loudoun County is not alone in this funding challenge. Many other systems throughout the country have successfully faced this challenge when they make strategic, long-term investments and commitments like Metrorail. Often they found new revenue sources to support their programs.

A new report entitled **Local and Regional Funding Mechanisms for Public Transportation** is a federally-funded research project that addresses this challenge. It provides an extensive list of funding sources that are in use or have the prospect of being used at the local level to support public transportation. The research identified and defined six major categories of local funding for public transportation, including the following:

- Traditional tax- and fee-based funding sources (e.g., sales tax, vehicle fees, bus advertising)
- Common business, activity, and related funding sources (e.g., car rental, payroll taxes, room occupancy)
- Revenue streams from transit projects
- New “user” or “market-based” funding source
- Financing mechanisms
- Fare policy and strategy

The report focuses on the first two funding categories. It provides:

- Guidance on evaluating local and regional funding mechanisms, including guidance on the advantages and disadvantages of various sources, criteria that should be considered in selecting local or regional funding sources, and consideration of key contextual issues that are important in establishing a practical base of understanding to support funding alternatives.
- A list of steps from the experiences of transit systems around the country that have successfully sought and enacted new or increased sources of funding.

The following is an excerpt from the report findings on local funding mechanisms:

Traditional taxes and fees used to support transit include:

- **General revenues** from local and county governments
- **Sales taxes**, including portions exclusively dedicated to transit, or committed through annual budget processes
- **Property taxes**, including portions exclusively dedicated to transit, or committed through annual budget processes
- **Contract or purchase of service revenues** from public and private entities
- **Lease revenues**, largely from property owned by the transit system



- *Advertising revenues*
- *Concession fees*
- *Vehicle fees*, including title, registration, tags and inspection fees portion of which are used to support transit in relatively few cases

Sales taxes are by far the most common local and regional revenue source, especially across larger metropolitan areas.

Property taxes are more frequently used in smaller jurisdictions.

Contract or purchase of service revenues are used across all sizes and types of transit systems, but yield a far smaller portion of total revenues.

Lease revenues are generally viable in larger systems that own property (terminals, stations and transfer facilities, parking facilities, etc.).

Advertising revenues are broadly used but provide a relatively small yield in terms of total expenditures.

Concession fees are largely limited to larger systems where physical facilities and local policies allow for retail vendors to operate economically.

Business activity taxes and fees used to support transit include:

- *Payroll taxes on local businesses*
- *Car rental fees*
- *Vehicle lease fees*
- *Parking fees at facilities owned by transit systems, or through fee-sharing arrangements with local governments*
- *Mortgage recording and realty transfer taxes*
- *Room occupancy taxes*
- *Corporate franchise and business license fees*

Payroll taxes, which are applied broadly in the few cases where they are authorized by states, can provide significant revenues. The remaining examples are less frequently used and generate limited revenues.

Revenue streams from projects refer to income captured from assessments of varying kinds on new development. By their nature, these flow from individual development projects under varied negotiated arrangements with funding often directed to transit improvements specifically serving the individual development project, e.g. “joint development,” “value capture,” benefit assessment districts,” and other forms of public-private partnerships.

“User” and market-based taxes and fees include such measures as road tolling, congestion pricing, emissions fees and fees based on vehicle-miles-of-travel. Aside from tolling which is reasonably wide-spread with revenues usually dedicated to the ongoing maintenance of the facilities being tolled, application of the remaining examples is in its infancy, including strategies for allocating revenues across modes.

Financing mechanisms are essentially borrowing or debt mechanisms, e.g. various forms of bonding, that allow future revenue streams from sources like those above to be brought forward for use earlier in time. They are most often used to support major capital projects rather than ongoing transit operations and must be repaid from specific authorized sources into the future.

Loudoun County has shown leadership in preparing a long-range transit plan. It can use that same leadership and the experiences of other transit systems to develop the funding to implement the plan.



Appendix 6

Planning Guidelines for Bicycle and Pedestrian Facilities

The County has generated guidelines for the provision of bicycle and pedestrian facilities as detailed in the table below. The purpose of these guidelines is to direct future developments on providing adequate bicycle and pedestrian facilities along Countywide Transportation Plan (CTP) Roads and to implement the policies of the *Loudoun County Bicycle and Pedestrian Mobility Master Plan*. They take into consideration general safety standards and are considered to be the minimum standards for provision of bicycle and pedestrian facilities. These guidelines do not preclude the County from asking for measures that are over and above the minimum criteria. All facilities shall be designed in accordance with the American Association of State Highway and Transportation Officials' (AASHTO) design guidelines and standards, VDOT design guidelines and standards, and the *Loudoun County Pedestrian and Bicycle Design Toolkit*, as appropriate.

| Bicycle and Pedestrian Facilities | |
|-----------------------------------|---|
| Type of Road | Facility to be provided |
| Eight (8) and Six (6) Lane Roads | Two – 10' wide Shared Use Path or amended dimensions by AASHTO in the future, one on each side, over 14' wide right-of-way or public easement if required by the County. |
| | If a 10' wide Shared Use Path is not feasible, a narrower shared use path may be accepted based on the <i>Loudoun County Pedestrian and Bicycle Design Toolkit</i> and AASHTO' standards and design guidelines. |
| | For on-road bicycle facilities (bike lanes) where proposed and in accordance with the <i>Loudoun County Bicycle & Pedestrian Mobility Master Plan</i> , refer to <i>Loudoun County Pedestrian and Bicycle Design Toolkit</i> for design guidelines. Pedestrian facilities need to be provided as well and designed as per the <i>Loudoun County Bicycle & Pedestrian Mobility Master Plan</i> |
| Four (4) Lane Road | One – 10' wide Shared Use Path over 14' wide right-of-way or public easement if required by the County. The County will make the final decision on the location of the Shared Use Path. |
| | and One 6' wide sidewalk designed as per the <i>Loudoun County Bicycle & Pedestrian Mobility Master Plan</i> (Walkway and Sidewalk Policies) or a Shared Use Path. The County will make the final decision on the type and location of the facility. Sidewalks will not typically be provided along rural road sections with no or few adjacent housing units. |
| | and On road bicycle facilities (bike lanes) in accordance with the Loudoun County Bicycle & Pedestrian Mobility Master Plan (except when determined to be infeasible according to AASHTO' standards and guidelines); refer to Loudoun County Pedestrian and Bicycle Design Toolkit for design guidelines. |
| Two (2) Lane Road | If a 10' wide Shared Use Path is not feasible, a narrower shared use path may be accepted based on the <i>Loudoun County Pedestrian and Bicycle Design Toolkit</i> and AASHTO' standards and design guidelines. |
| | Two 6' wide sidewalks designed as per the Loudoun County Bicycle & Pedestrian Mobility Master Plan (Walkway and Sidewalk Policies). Such sidewalks shall be provided on both sides in Suburban Policy, Transition Policy and Joint Land Management Areas, and where feasible in Villages in the Rural Policy Area. |
| | and On-road bicycle accommodations or a Shared Use Path. The County will make the final decision on the type and location of the facility. Sidewalks will not typically be provided along rural road sections with no or few adjacent housing units. |
| | For on-road bicycle facilities (bike lanes) where proposed and in accordance with the <i>Loudoun County Bicycle & Pedestrian Mobility Master Plan</i> , refer to <i>Loudoun County Pedestrian and Bicycle Design Toolkit</i> for design guidelines. |
| | |
| | |



Table Notes:

The County may approve alternative shared use path or sidewalk alignments to avoid damaging sensitive environmental, historic or cultural features or to avoid engineering constraints, provided the alternative alignment serves the planned purpose of the planned shared use path or sidewalk to an equivalent degree.

The County does not anticipate bicycle and pedestrian facilities along limited access roadways. Off-road shared use paths will be provided along limited access roadways, as permitted by state statutes.

The Bicycle and Pedestrian Facilities will be constructed at the interim condition (and ultimate condition if there is no interim condition) but designed for the ultimate condition of the roadway.



Appendix 7

Virginia State Noise Abatement Policy

I. Authorization

The State Noise Abatement Policy was adopted pursuant to the authority of Section 33.1-12 of the Code of Virginia, effective January 1, 1989.

II. Forward

The State Noise Abatement Policy established consistent criteria for providing noise abatement measures on all proposed highway projects regardless of funding. The proposed policy mirrors the Federal Highway Administration (FHWA) noise abatement criteria (U.S. Code of Federal Regulations, 23 CFR 772) currently employed by VDOT for federal aid projects. For non-federal aid projects, the Policy requires 50 percent contribution to the cost of abatement by the locality through which the project traverses. The Policy also requires that the locality have an ordinance which requires developers to provide noise abatement for all new residential and other noise sensitive developments adjacent to existing highways or known future highway corridors.

III. Definitions

The following words and terms, when used in this Policy, shall have the following meaning, unless clearly indicated otherwise:

“Commonwealth” means Commonwealth of Virginia.

“The Cost Effectiveness Criteria of \$30,000 Per Receptor” means the cost of the abatement measure divided by the number of impacted receptors receiving noise protection (a minimum reduction of 5 decibels). The abatement cost includes only the cost of materials and installation. It does not include costs for drainage, mobilization, median barriers, landscaping, and other incidental items.

“Decibel (dB)” means a logarithmic unit which expresses the ratio of the sound pressure level being measured to a standard reference level.

“A-weighted decibel (dBA)” means a sound level that best approximates the frequency response of the human ear and is the measure used for expressing traffic noise levels in noise studies.

“Design Year” means the future year used to estimate the probable traffic volume for which the highway is designed. A time of 10 to 20 years from the start of construction is usually used.

“Extenuating Circumstance” means any unforeseen situation which may arise on an individual project, and due to its sensitivity to noise and its importance or value to the community, noise abatement is warranted even though the cost effectiveness criteria or other criteria contained in the State Noise Abatement Policy are not met. An example is a noise barrier along I-495 which protects residential properties and a church which has membership of over 1,000 people and is used regularly for religious,



social, and recreational activities. Even though the cost per receptor exceeds the \$30,000 criteria, the barrier has been determined to be warranted due to the church's value to the surrounding communities, its sensitivity to noise, and the high noise levels which would occur without a barrier.

"FHWA" means Federal Highway Administration.

"Noise Abatement" means any measure taken to reduce highway traffic noise levels.

"Noise Abatement Criteria" (NAC) means numerical noise standards promulgated by the Federal Highway Administration and published in U.S. Code of Federal Regulations (23 CFR 772).

"Noise Barrier" means a solid structure erected between the highway and the protected property which is designed to reduce traffic noise levels at the protected property by blocking the sound waves on their path from the highway to the protected property.

"Receptor" means any property containing noise sensitive activity. Table 1 to Part 772 of the U.S. Code of Federal Regulations (23 CFR 772) lists the land use categories which are considered to contain noise sensitive activities to which the Noise Abatement Criteria apply. The list includes residential properties, both single family and multi-family, churches, schools, playgrounds, recreational areas, parks, libraries, and hospitals. Each residential unit is counted as a single receptor in the determination of cost effectiveness of noise abatement. The weight given to other activity areas, such as schools, churches, parks, etc., during the abatement evaluation is based on several factors and is determined on an individual basis. The term noise sensitive applies only to human activity. A receptor can be developed land or undeveloped land for which a development plan, design and program must have been approved by the local jurisdiction prior to the adoption by the Commonwealth Transportation Board of the highway alignment.

"VDOT" means Virginia Department of Transportation.

IV. State Noise Abatement Policy

It is the policy of the Virginia Department of Transportation (VDOT) to employ the following criteria and procedures in determining the need and feasibility of noise abatement measures on all highway projects in the Commonwealth. In as much as VDOT does not have a retrofit noise abatement program for existing highways, this policy applies to proposed highway construction and improvement projects.

- a. The U.S. Code of Federal Regulations (23 CFR 772) will be the guiding document for the analysis and abatement of highway traffic noise on all proposed highway projects.
- b. In assessing traffic noise levels from a proposed project or determining the dimensions of a noise barrier, a source height of 8 feet for tractor trailers, 2.3 feet for medium trucks and 0 feet for automobiles will be used.
- c. Highway noise impacts beyond 1,000 feet from the roadway will not be considered in determining the need for the dimensions and cost of a noise barrier.
- d. A noise abatement measure will be considered if,
 1. It provides a minimum of 5 dB(A) attenuation (positive noise benefit), and
 2. The design year noise levels emanating from the project approach (one decibel less than) or exceed the FHWA Noise Abatement Criteria (NAC) given in Table 1 to Part 772 of the U.S. Code



of Federal Regulations (23 CFR 772) for various land use categories, or

3. The design year noise levels emanating from the project exceed existing noise levels by 10 dB(A) or more.
- e. A noise abatement measure will be considered cost effective if the cost of the measure per protected receptor does not exceed \$30,000. For the purpose of this provision, the term “receptor” refers to any land use category listed in Table 1 to Part 772 of the U.S. Code of Federal Regulations (23 CFR 772). (For example, a residential receptor would include single and multi-family dwellings).
- f. Extenuating circumstances will be considered on an individual project basis.
- g. For federal aid projects, the responsibility for assembling all relevant information and developing noise abatement related recommendations will rest with the joint FHW-VDOT standing Noise Abatement Committee. On non-federal aid projects, the committee’s function will be carried by its VDOT members.
- h. The Chief Engineer, on behalf of the Commonwealth Transportation Board, will make the final determination on all noise abatement related issues.
- i. For non-federal aid projects, VDOT will consider and, if feasible, construct and maintain noise abatement measures, provided
 1. The local jurisdiction through which the project traverses agrees to assume 50 percent of the cost of the abatement measure, and
 2. The local jurisdiction has an ordinance requiring developers to include noise abatement in their plans for residential and other noise sensitive developments adjacent to existing highways and future highway alignments previously adopted by the Commonwealth Transportation Board. VDOT staff will provide limited assistance to local jurisdictions in the preparation of the noise ordinances. The abatement measures constructed by developers will ensure compliance with the FHWA Noise Abatement Criteria, where these criteria can be reasonably achieved, but will at the minimum, provide 5 dBA noise attenuation for each structure or activity which the abatement measure is located on the highway right of way, the developer will comply with VDOT’s design, construction and materials specifications. The local jurisdiction will be responsible for maintaining the noise abatement measures constructed by the developer.
- j. If a local jurisdiction insists on the provision of noise abatement measure deemed unnecessary by VDOT, arrangements may be made for the use of VDOT right of way, provided:
 1. The locality is willing to assume 100 percent of the cost of the abatement measure including but not limited to preliminary engineering, construction and maintenance and,
 2. VDOT’s material, design and construction specifications are met.
- k. In assessing the noise impacts associated with a highway project, undeveloped lands will be treated as developed lands, if and only if a proposed land use development plan and a schedule of development have been filed with and approved by the local jurisdiction prior to the date the Commonwealth



Transportation Board selects the final corridor alignment. The final decision concerning noise abatement for a proposed development will be conditioned on two points.

1. The noise barrier will not be constructed until the portion of the development to be protected by the abatement measure is completed to the satisfaction of VDOT, and
2. When there is a substantial time lapse between the final decision and the date the development is completed, the noise abatement analysis will be updated and the decision will be reconsidered.



Glossary ~

Accessibility: (1) The extent to which facilities are barrier free and useable by disabled persons, including wheelchair users. (2) A measure of the ability or ease of all people to travel among various origins and destinations.

Activity Center : An area with high population and concentrated activities which generate a large number of trips (e.g., Central Business District, shopping centers, business or industrial parks, recreational facilities (also known as trip generator).

Alight: To get off a transit vehicle. Plural: “*alightings*”.

AM Peak (or PM Peak): The morning or evening commute period, about three hours, in which the greatest movement of passengers occurs, generally between home and work; the portion of the morning or evening service period where the greatest level of ridership is experienced and service provided.

Synonyms: *AM Rush, Early Peak, Morning Peak, Morning Rush, PM Rush, Late Peak, Evening Peak, Evening Rush, Peak Period*

Americans with Disabilities Act of 1990 (ADA): The law passed by Congress in 1990 which makes it illegal to discriminate against people with disabilities in employment, services provided by state and local governments, public and private transportation, public accommodations and telecommunications.

Arterial Road: Generally, a publicly owned and maintained road, designed with restricted access and primarily intended to carry “through” traffic at 45 to 55 miles per hour.

Board: To go onto or into a transit vehicle. Plural: “*Boardings*”.

Bus (Motorbus): A rubber-tired, self-propelled, manually-steered vehicle with fuel supply carried on board the vehicle. Types include articulated, charter, circulator, double deck, express, feeder, intercity, medium-size, sightseeing, small, standard-size, subscription, suburban, transit and van.

Bus, Circulator: A bus serving an area confined to a specific locale, such as a downtown area or suburban neighborhood with connections to major traffic corridors.

Bus, Commuter: A bus with front doors only, normally with high-backed seats, and with or without luggage compartments or restroom facilities for use in longer-distance service with relatively few stops.
Synonym: *Commuter Coach*.

Bus, Express: A bus that operates a portion of the route without stops or with a limited number of stops.

Bus, Feeder: A bus service that picks up and delivers passengers to a rail rapid transit station or express bus stop or terminal.

Bus, Subscription: A commuter bus express service operated for a guaranteed number of patrons from a given area on a prepaid, reserved-seat basis.

Bus, Transit: A bus with front and center doors, normally with a rear-mounted engine, low-back seating, and without luggage compartments or restroom facilities for use in frequent-stop service.

Bus Lane: A street or highway lane intended primarily for buses, either all day or during specified periods, but sometimes also used by carpools meeting requirements set out in traffic laws.

Bus Rapid Transit (BRT): BRT is essentially transit on rubber wheels rather than rail. It combines the features of conventional buses and a rapid transit system, such as Metrorail. To save time, passengers would pay their fares when they enter the station, not when they board the bus. They would enter low-floor



buses through one of several doors, the way subway riders enter a Metrorail car. Buses would run every few minutes and would stop at designated station platforms.

Bus Shelter: A building or other structure constructed near a bus stop, to provide seating and protection from the weather for the convenience of waiting passengers.

Bus Stop: A place where passengers can board or alight from the bus, usually identified by a sign.

Capital: Long-term assets, such as property, buildings, roads, rail lines, and vehicles.

Capital Assistance: Financial assistance for transit capital expenses (not operating costs); such aid may originate with federal, local or state governments.

Capital Costs: Costs of long-term assets of a public transit system such as property, buildings, vehicles, etc.

Capital Improvements Program (CIP): The County's plan for future capital project expenditures. This plan spells out the capital facilities that the County plans to finance, including schools, libraries, parks, etc.

Capital Project: Construction and/or procurement of district assets, such as transit centers, transit vehicles and track.

Captive Rider: Someone who must use public transportation for his/her travel. Synonym: *Transit Dependent*

Carpool: An arrangement where people share the use and cost of a privately owned automobile in traveling to and from pre-arranged destinations.

Chicane: A form of curb extensions that alternate from one side of the street to the other. A traffic calming technique.

Choice Rider: A rider who chooses to ride public transit but could otherwise take another travel mode.
Commuter - A person who travels regularly between home and work or school.

Choker: Facing curb extensions that narrow the street at a particular location. A traffic calming technique.

Collector Road: A road into which local roads funnel and which, in turn, carries traffic to an arterial road. Ideally a collector road would have few private entrances accessing it directly.

Community Plan: Specific detailed land use plans to be developed for the four communities of the Suburban Policy Area: Ashburn, Dulles, Potomac, and Sterling.

Commuter Rail: Long-haul rail passenger service operating between metropolitan and suburban areas, whether within or across the geographical boundaries of a state, usually characterized by reduced fares for multiple rides, and commutation tickets for regular, recurring riders. Also known as "regional rail" or "suburban rail."

Comprehensive Plan: The general plan for the County and its supporting components, including the *Revised Countywide Transportation Plan*. Every County in Virginia must have a Comprehensive Plan, which spells out policies for future development in order to ensure orderly growth and the protection of the public health and welfare. The Comprehensive Plan may consist of a number of components, such as local area plans, service plans, and strategic plans.

Context Sensitive Design: A project development approach that promotes the involvement of all relevant stakeholders in the development of a transportation facility that fits its physical setting and also reflects concerns for scenic, aesthetic, historic, and environmental resources while providing for transportation safety and mobility.



Controlled Access: Access onto divided roadways concentrated at median crossovers. Individual parcel access highly discouraged, with access provided through interparcel connections and consolidated access points.

Corridor: A broad geographical band that follows a general directional flow connecting major sources of trips that may contain a number of streets, highways and transit route alignments.

dB(A) Leq (h): A measurement of highway traffic noise. dB (A) is the A-weighted levels, or decibels adjusted to approximate the way that an average person hears sound. Leq is the constant, average sound level. Highways that cause noise levels to be experienced at exterior residential locations above 67 dB (A) Leq and at exterior commercial locations above 72 dB (A) Leq are considered to have a negative impact and should be mitigated as part of roadway improvement projects.

Deadhead: There are two types of deadhead or non-revenue bus travel time:

(1) Bus travel to or from the garage and a terminus point where revenue service begins or ends; (2) A bus' travel between the end of service on one route to the beginning of another.

Synonyms: *Non-Revenue Time*

Demand Responsive Transportation Services: Door to door transit service, usually by a small 13-passenger shuttle bus whereby a person telephones to schedule a pickup during operating hours. Also called "Dial-a-Ride."

Design Speed: Recommended speed, which sets the design standards for new and/or improved road sections. The design speed should be flexible to minimize the impact of the improvement on the existing corridor, while maintaining safety.

Dial-a-Ride: See "Demand Responsive Transportation Services."

Disabled: With respect to an individual, a physical or mental impairment that substantially limits one or more of the major life activities of such an individual; a record of such an impairment; or being regarded as having such an impairment.

Elevated rail: Rail that runs on a grade-separated guideway on a structure that provides overhead clearance for vehicles running on the terrain below.

Environmental Impact Statement (EIS): The document prepared as part of the National Environmental Policy Act (NEPA) process. A Draft EIS (DEIS), followed by a public hearing and final EIS (FEIS) are prepared. Occasionally, a Supplemental DEIS is prepared to address a change in circumstance. These documents are the result of a systematic, comprehensive review process designed to identify and evaluate the potential impacts of a project.

Express Service: Express service is deployed in one of two general configurations:

(1) A service generally connecting residential areas and activity centers via a high speed, non-stop connection, e.g., a freeway, or exclusive right-of-way such as a dedicated busway with limited stops at each end for collection and distribution. Residential collection can be exclusively or partially undertaken using park-and-ride facilities.

(2) Service operated non-stop over a portion of an arterial in conjunction with other local services. The need for such service arises where passenger demand between points on a corridor is high enough to separate demand and support dedicated express trips.

Synonyms: *Rapids (1 or 2), Commuter Express (1), Flyers (1)*

Fare: Payment in the form of coins, bills, tickets, tokens and various electronic media (such as SmarTrip Cards) collected for transit rides.



Fare Box: A device that accepts the coins, bills, tickets and tokens given by passengers as payment for rides.

Farebox Recovery Ratio: A measure of the proportion of transit operating expenses covered by passenger fares. It is calculated by dividing a transit operator's fare box revenue by its total operating expenses.
Synonyms: *Fare Recovery Ratio*

Farebox Revenue: The value of cash, tickets and pass receipts given by passengers as payment for public transit rides.

Fare Collection System: The method by which fares are collected and accounted for in a public transportation system.

Fare Structure: The system set up to determine how much is to be paid by various passengers using the system at any given time.

Federal Transit Administration (FTA, formerly UMTA, Urban Mass Transit Administration): A part of the U.S. Department of Transportation (DOT) which administers the federal program of financial assistance to public transit.

Feeder Service: Service that picks up and delivers passengers to a regional mode at a rail station, express bus stop, transit center, terminal, Park-and-Ride, or other transfer facility.

Fiscal Year (FY): The yearly accounting period for the Loudoun County and State of Virginia government which begins July 1 and ends on the following June 30. The fiscal year is designated by the calendar year in which it ends (e.g., FY 2004 is from May 1, 2003 to September 30, 2004).

Fixed Route: Transit service provided on a repetitive, fixed-schedule basis along a specific route, with vehicles stopping to pick up passengers at and deliver passengers to specific locations.

Fixed Route Transit Service: Bus service on a fixed route and fixed schedule. Loudoun Transit in Leesburg is an example of a fixed-route transit service.

Formula Funds: Funds distributed or apportioned to qualifying recipients on the basis of formulas described in law; e.g., funds in the Section 18 program for Small Urban and Rural Transit Assistance, which are distributed to each state based on the state's percentage of national rural population. See also "Section 9."

Garage: The place where revenue vehicles are stored and maintained and from where they are dispatched and recovered for the delivery of scheduled service.

Synonyms: *Barn, Base, Depot, District, Division, O/M Facility (ops/maint), Yard*

Headway: The scheduled time interval between any two revenue vehicles operating in the same direction on a route. Headways may be LOAD driven, that is, developed on the basis of demand and loading standards or, POLICY based, i.e., dictated by policy decisions such as service every 30 minutes during the peak periods and every 60 minutes during the base period.

Synonyms: *Frequency, Schedule, Vehicle Spacing*

Heavy Rail: High-speed, passenger rail cars operating singly or in trains of two or more cars on fixed rails in separate rights-of-way from which all other vehicular and foot traffic are excluded. Also known as "rapid rail," "subway," "elevated (railway)," or "metropolitan railway (metro)."

Heritage Resource: Any historic, architectural, archeological, or scenic site, structure, landscape or object that has cultural significance to the community.



High Occupancy Vehicle (HOV): Vehicles that can carry more than two persons. Examples of high occupancy vehicles are a bus, vanpool and carpool. These vehicles sometimes have exclusive traffic lanes called "HOV lanes," "busways," "transitways" or "commuter lanes."

HOV Lane: A traffic lane in a street or highway reserved for high occupancy vehicles, which may include two person vehicles in some applications.

HOT Lane: A traffic lane in a street or highway on which vehicles with less than the criteria number of occupants is charged a toll, and vehicles at or above the criteria number of occupants is charged no toll or a reduced toll.

Induced Travel Demand: Traffic growth produced by the addition of capacity in the transportation system or a reduction in the price of travel.

Intelligent Transportation Systems: The application of current and evolving technology (particularly computer and communications technology) to transportation systems, and the careful integration of system functions, to provide efficient and effective solutions to multi-modal transportation problems.

Interchange: An intersection of two roadways where the through traffic lanes are vertically separated by grade (i.e. one roadway travels over or under the other). Turn movements between the intersecting roadways occur via ramps.

Joint Development: Ventures undertaken by the public and private sectors for development of land around transit stations or stops.

Joint Land Management Area (JLMA): The growth area surrounding an incorporated town and served by public water and sewer or projected to be served in the near future. The JLMA is planned cooperatively by the County and the Towns. The boundary of the JLMA marks the edge of utility service and distinguishes between significantly different land uses and thus is an urban growth boundary.

Level of Service (LOS): A qualitative measure describing operational conditions within a traffic stream, generally in terms of such factors as speed and travel time, freedom to maneuver, traffic interruptions, comfort and convenience, and safety. Traffic flow conditions are divided into six levels of service (LOS) ranging from LOS "A" (ideal, free flow) through LOS "F" (breakdown). The Northern Virginia Transportation Coordinating Council (TCC) coined a seventh LOS "G", to describe the breakdown in travel conditions over an expanded peak period.

Light Rail: Lightweight passenger rail cars operating singly (or in short, usually two-car, trains) on fixed rails in right-of-way that is not separated from other traffic for much of the way. Light rail vehicles are driven electrically with power being drawn from an overhead electric line via a trolley or a pantograph. Also known as "streetcar," "tramway," or "trolley car."

Light Rail Transit (LRT): An electric railway with a "light volume" traffic capacity compared with heavy rail. Light rail may use shared or exclusive rights-of-way, high or low platform loading and multi-car trains or single cars.

Synonyms: *Streetcar, trolley car and tramway*

Limited Access: Access onto roadway restricted to grade separated interchanges. No at-grade access is allowed.

Local Access: Relatively unrestricted individual parcel access directly onto roadway. Individual residential parcel access highly discouraged, with access provided through interparcel connections and consolidated access points.

Local/Secondary Road: A public, state-owned and maintained road designed for direct access from individual lots to subdivision and rural collector roads.



Major Collector: A roadway that carries traffic through the county, provides a connection between arterials, and is accessed by minor collectors and/or rural secondary roads.

Minor Arterial: A roadway that serves commuter traffic with access from major and minor collectors.

Minor Collector: A roadway that carries traffic from local subdivision streets and rural secondary roads to major collectors and/or arterials.

Mode: A particular form of travel (e.g., bus commuter, rail, train, bicycle, walking or automobile).

Mode Split: The proportion of people that use each of the various modes of transportation. Also describes the process of allocating the proportion of people using modes. Frequently used to describe the percentage of people using private automobiles as opposed to the percentage using public transportation.

Model: An analytical tool (often mathematical) used by transportation planners to assist in making forecasts of land use, economic activity, and travel activity.

National Environmental Policy Act of 1969 (NEPA): Federal law that requires that any major federal action or policy that has a significant impact on the environment will require the preparation of an EIS. The EIS must address:

- the environmental impact of the proposed action,
- any adverse environmental effects which cannot be avoided should the proposal be implemented,
- alternatives to the proposed action,
- the relationship between local short-term uses of man's environment and the maintenance and enhancement of long-term productivity,
- and any irreversible and irretrievable commitments of resources which would be involved in the proposed action should it be implemented.

Network: The configuration of streets or transit routes and stops that constitutes the total system.

Non-attainment area: An area designated by the EPA and federal law under the Clean Air Act that does not meet federal pollution standards.

Off-Peak: Non-rush periods of the day when travel activity is generally lower and less transit service is scheduled.

Operating: Maintaining the ongoing functions of an agency or service. "Operating expenses" include wages, benefits, supplies, fuel and services. "Operating assistance" is used to pay for the costs of providing public transit service.

Operating Assistance: Financial assistance for transit operating expenses (not capital costs); such aid may originate with federal, local or state governments.

Operating Cost/Operating Expense: The total costs to operate and maintain a transit system including labor, fuel, maintenance, wages and salaries, employee benefits, taxes, etc.

Operating Deficit: The sum of all operating expenses minus operating revenues.

Operating Revenue: Receipts derived from or for the operation of transit service, including fare box revenue, revenue from advertising, interest and charter bus service and operating assistance from governments.

Operator: An employee of a transit system who spends his or her working day in the operation of a vehicle, e.g., bus driver, streetcar motorman, trolley coach operator, cablecar gripman, rapid transit train motorman, conductor, etc.



Origin: The location of the beginning of a trip or the zone in which a trip begins. Also known as a “Trip End”.

Paratransit: Comparable transportation service required by the Americans with Disabilities Act (ADA) of 1990 for individuals with disabilities who are unable to use fixed-route transportation systems.

Park-and-Ride: A parking area for automobile drivers who then board vehicles, shuttles or carpools from these locations.

Parking Cashout Program: A parking cashout program occurs when an employer makes employees pay to park in their own lot while giving the employees the money to make the payment. This is a TDM strategy because it presumes that some enterprising employees will find alternative means to get to work (e.g., carpool) to avoid paying this money back.

Passenger: A person who rides a transportation vehicle, excluding the driver.

Passenger Miles: A measure of service utilization which represents the cumulative sum of the distances ridden by each passenger. It is normally calculated by summation of the passenger load times the distance between individual bus stops. For example, ten passengers riding in a transit vehicle for two miles equals 20 passenger miles.

Passenger Revenue: Fares paid by passenger traveling aboard transit vehicles.
Synonyms: *Farebox Revenue*

Passenger Trips: The number of rides taken by people using a public transportation system in a given time period. Synonyms: *Ridership*

Pave-in-place: The Commonwealth’s pave-in-place program allows the county to pave gravel roads within a narrow, forty-foot right-of-way for those roads carrying between 50 and 750 vehicles per day, in a manner that is sensitive to the rural character of the roadway.

Peak Hour/Peak Period: The period with the highest ridership during the entire service day, generally referring to either the peak hour or peak several hours (peak period).
Synonyms: *Commission Hour*

Performance Criteria: Threshold measures (such as ridership, cost, cost per rider, etc.) that indicate the utilization and cost-effectiveness of proposed transit services are sufficient to justify investment.

Primary Roads/Routes: Roads owned by the Virginia Department of Transportation whose construction and/or maintenance is funded through the Virginia Transportation Development Program (VTDP). Primary roads generally serve a relatively large volume of regional traffic flow and range from route numbers 1 to 599 in the VDOT Primary Road system.

Principal Arterial: A roadway that serves regional and intrastate traffic with access from minor arterials and major collectors.

Private Sector Contributions: Funds provided by private entities towards the construction of transportation improvements that serve a public purpose; examples include special tax districts, private sector toll road construction, bond financing for transportation projects and impact fees.

Proffered Condition/Proffer: A voluntary promise or commitment given in writing by a developer to construct certain improvements, to make certain donations, or to develop property subject to specified conditions to mitigate the impact of the proposed development land and to develop the property in accord with the Comprehensive Plan.



Program: (1) *verb*, to assign funds to a project; (2) *noun*, a system of funding for implementing transportation projects or policies.

The Public-Private Transportation Act of 1995 (PPTA): The legislative framework enabling the Commonwealth of Virginia, qualifying local governments and certain other political entities to enter into agreements authorizing private entities to acquire, construct, improve, maintain, and/or operate qualifying transportation facilities.

Public Transportation: Transportation by bus, rail, or other conveyance, either publicly or privately owned, which provides to the public general or special service on a regular and continuing basis. Also known as "mass transportation," "mass transit" and "transit."

Rail, Commuter: Long-haul rail passenger service operating between metropolitan and suburban areas, whether within or across the geographical boundaries of a state, usually characterized by reduced fares for multiple rides, and commutation tickets for regular, recurring riders. Also known as "regional rail" or "suburban rail."

Raised crosswalk: A location where the crossing elevation is slightly higher than the roadway elevation. A traffic calming technique.

Rapid Transit: Rail or motorbus transit service operating completely separate from all modes of transportation on an exclusive right-of-way.

Recovery Time: Recovery time is distinct from layover, although they are usually combined together. Recovery time is a planned time allowance between the arrival time of a just completed trip and the departure time of the next trip in order to allow the route to return to schedule if traffic, loading, or other conditions have made the trip arrive late. Recovery time is considered as reserve running time and typically, the operator will remain on duty during the recovery period.
Synonyms: *Layover Time*

Revenue: Receipts derived from or for the operation of transit service including farebox revenue, revenue from other commercial sources, and operating assistance from governments. Farebox revenue includes all fare, transfer charges, and zone charges paid by transit passengers.

Revenue Miles: Miles operated by vehicles available for passenger service.

Revenue Vehicle Hour: The measure of scheduled hours of service available to passengers for transport on the routes, equivalent to one transit vehicle traveling in one hour in revenue service, excluding deadhead hours but including recovery/layover time. Calculated for each route.

Reverse Commute: Movement in a direction opposite to the main flow of travel, such as from the Central City to a suburb during the morning commute hour.

Ridesharing: A form of transportation, other than public transit, in which more than one person shares in the use of the vehicle, such as a van or car, to make a trip.

Ridership: The number of rides taken by people using a public transportation system in a given time period. Synonym: *Passenger Trips*

Right-of-Way (ROW, R/W): The land over which a public road or rail line is built. An exclusive right-of-way is a road, lane, or other right-of-way designated exclusively for a specific purpose or for a particular group of users, such as light rail vehicles or buses.

Roundabout: An unsignalized circular intersection of two or more roadways where the entering traffic yields to circulating traffic.



Roundabout Interchange: A roundabout interchange is a freeway-to-street or a street-to-street interchange that contains at least one roundabout.

Route: A specified path taken by a transit vehicle usually designated by a number or a name, along which passengers are picked up or discharged. Synonyms: *Line*

Rural Provider: An entity that provides transit service outside of urbanized areas.

Secondary Roads/Routes: VDOT roads with route numbers 600 and above which include a wide variety of facilities.

Scenic Highway: A road located within a protected corridor and having recreational, historic or scenic interest.

Schedule: From the transit agency (not the public timetable), a document that, at a minimum, shows the time of each revenue trip through the designated time points. Many properties include additional information such as route descriptions, deadhead times and amounts, interline information, run numbers, block numbers, etc. Synonyms: *Headway, Master Schedule, Timetable, Operating Schedule, Recap/Supervisor's Guide*

Scheduling: The planning of vehicle arrivals and departures and the operators for these vehicles to meet consumer demand along specified routes.

Secondary Road: A road owned by VDOT whose construction and/or maintenance is funded through the Virginia Secondary Road Improvement Program (SRIP).

Service Area: A geographic area which is provided with transit services. Service area is now defined consistent with ADA requirements.

Service Hours: The time from the first scheduled pickup to the last scheduled drop-off; the basis of payment for contracted transit service in Loudoun County.

Service Standards: A benchmark by which service operations performance is evaluated.

Shuttle: A public or private vehicle that travels back and forth over a particular route, especially a short route or one that provides connections between transportation systems, employment centers, etc.
Small Bus - See "Bus, Small."

Speed Bump: A raised hump in the paved surface of a street that extends across the street, usually not more than five inches high. A traffic calming technique.

Subsidy: Funds granted by federal, state or local government.

Traffic Calming: Measures to reduce the negative effects of motor vehicle use, alter driver behavior and improve conditions for non-motorized street users. Traffic calming includes both physical measures and non-physical measures (community education and enforcement). See also choker, chicane, raised crosswalk, traffic circle or roundabouts, and speed bump.

Transfer: A slip of paper issued to a passenger that gives him or her the right to change from one transit vehicle to another according to specified limitations.

Transit: A shared mode of transportation, which often operates on a fixed route and fixed schedule, and is available to all who pay the fare; however, demand responsive transportation, which does not operate on a fixed route or fixed schedule is also a form of transit. Other examples include bus, light rail, and heavy rail. See "Public Transportation."



Transit Center: A fixed location where passengers transfer from one route to another.

Transit Corridor: A broad geographic band that follows a general route alignment such as a roadway or rail right-of-way and includes a service area within that band that would be accessible to the transit system.

Transit Dependent: Someone who must use public transportation for his/her travel.

Synonym: *Captive Rider*

Transit Friendly Design: Design of roadways and streetscapes that facilitates transit use, such as pull-off areas for buses, adequate sidewalks or shoulders for safe passenger waiting and departing, and street design that allows for turning and circulation of buses throughout the development.

Transit Node: An area designated per the Loudoun County Revised General Plan as a focal point for transit service and transit-supportive land uses.

Transit Oriented Development (TOD): Moderate- and high-density housing, along with complementary public uses, jobs, retail, and services concentrated in mixed-use developments along points along a transit system.

Transit Station: Structures that house both passengers and transportation systems operations and equipment.

Transit Stop: A location along the street or transit line that has simple facilities such as signage and shelters.

Transit System: An organization (public or private) providing local or regional multi-occupancy-vehicle passenger service. Organizations that provide service under contract to another agency are generally not counted as separate systems.

Travel Demand Forecasting Model: A computer program based on a series of mathematical equations that simulates the performance of the transportation system given a set of land use conditions. It estimates trip generation (how much travel), trip distribution (who goes where), mode choice (how people travel), and route choice. It provides decision makers with information related to questions such as:

- Which land use scenario yields the least amount of travel by private automobile?
- Where will traffic congestion likely appear?
- How will future traffic congestion levels be affected by various potential land use and development scenarios?
- What types of transportation investments will most improve future mobility?
- How many people will use public transit or car for their trip to work?

Travel Demand Management (TDM): Programs and policies to reduce and/or manage the demand for travel by automobile during peak periods. Programs and policies include those that encourage transit use, carpooling, vanpooling, flexible work hours, and working at or closer to home.

Trip: The one-way operation of a revenue vehicle between two terminal points on a route. Trips are generally noted as inbound, outbound, eastbound, westbound, etc. to identify directionality when being discussed or printed. Synonyms: *Journey, One-Way Trip*

Transportation Analysis Zones (TAZ): The geographic unit of analysis in a four-step model for travel demand. Usually, an urban area is divided into hundreds or thousands of transportation analysis zones (TAZs).

Urbanized Area (UZA): An U.S. Bureau of Census-designated area of 50,000 or more inhabitants consisting of a central city or two adjacent cities plus surrounding densely settled territory, but excluding the rural portion of cities.



Vehicle Miles: The number of miles traveled by a vehicle, usually calculated by mode.

Virginia Byway: A Virginia Byway is defined as a road, designated as such by the Commonwealth Transportation Board (CTB) having relatively high aesthetic or cultural value, leading to or within areas of historical, natural or recreational significance.

Wide Curb Lane: an outside travel lane provided for bicyclists with a width of at least 14 feet; also referred to as a wide outside lane or shared lane, and typically does not include bikeway designation.

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