2035 Transportation Plan Update

Win-Fred MPO 2035 Transportation Plan Update

Prepared for:

Winchester-Frederick County Metropolitan Planning Organization
Winchester, Virginia

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(Disclaimer)

VIRGINIA DEPARTMENT OF TRANSPORTATION
TRANSPORTATION & MOBILITY PLANNING DIVISION

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Chapter 1 Introduction

Transportation Planning Process

The Winchester-Frederick County Metropolitan Planning Organization (Win-Fred MPO) is required by the Virginia Department of Transportation (VDOT) to oversee the development of transportation plans, updated approximately every five years to reflect changes in the region. The 2030 Long Range Transportation Plan was approved by the Win-Fred MPO in 2005 and amended in 2007 based on Federal SAFETEA-LU legislation. This plan update extends the planning horizon for the transportation plan out to the year 2035. Prior to the designation of the Winchester area as a urbanized area, VDOT was responsible for the development of the regional transportation plan. Member jurisdictions work with the Northern Shenandoah Valley Regional Commission (NSVRC), VDOT and DRPT to update the Long Range Transportation Plan.

When the 2000 US Census was completed, the Winchester region was classified as a metropolitan area, and the primary responsibility for regional transportation planning was transferred to the local region, under the auspices of an organization called a Metropolitan Planning Organization (MPO). VDOT and DRPT continue to have a role as voting members of the MPO and in providing technical assistance. The final 2010 US Census data products and revised urban area definitions may have an impact on the size and geographic coverage area of the MPO.

Metropolitan Planning Organization Process

The Win-Fred MPO is the organization responsible for conducting the continuing, comprehensive, and coordinated (3-C) planning process for the Win-Fred MPO in accordance with requirements of Section 134 (Title 23 U.S.C.) of the Federal Highway Act of 1962, and Section 5303 of the Federal Transit Act. The Win-Fred MPO is the official MPO for the urbanized area, designated by the Governor of Virginia, under Section 134 of the Federal Aid Highway Act, and the joint metropolitan planning regulations of the Federal Highway Administration (FHWA) and the Federal Transit Administration (FTA).

In order to continue updating, coordinating, and implementing the planning process, the Win-Fred MPO adopts an annual work program and budget known as the Unified Planning Work Program (UPWP). The UPWP identifies all activities to be undertaken in the Win-Fred MPO study area during the Commonwealth fiscal year which begins July 1st and ends the following June 30th. The UPWP provides a mechanism for the coordination of transportation planning activities for the MPO, and is required as a basis and condition for all

federal funding assistance for transportation planning by the joint metropolitan planning regulations of FHWA and FTA.

Formation of Win-Fred MPO

MPO Defined By US Census

The Win-Fred MPO was created as a result of the designation of the Winchester-Frederick County Urbanized Area by the U.S Census on May 1, 2002. Federal regulations require an urbanized area to create and maintain an ongoing transportation planning process that is comprised of representatives of the local jurisdictions as well as state and federal transportation officials. The boundaries of the Win-Fred MPO are shown below:

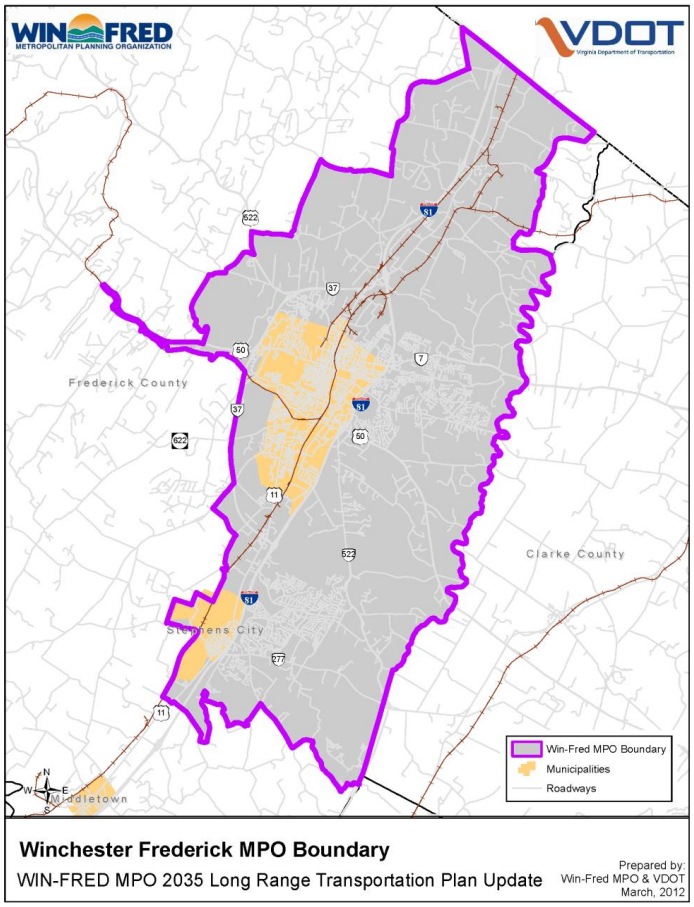


Figure 1-1: Win-Fred MPO Boundary

The first meeting of the MPO was held on February 26, 2003. The MPO was created through a Memorandum of Understanding (MOU) that was executed between the local jurisdictions in the urbanized area, including the City of Winchester, Frederick County, and the Town of Stephens City, and the Secretary of Transportation for the Commonwealth of Virginia. The MOU was adopted by the MPO at its first meeting, circulated to the local governments for adoption, and was finally executed on April 30, 2003. In addition, the MPO designated the NSRVC to serve as the staff to the MPO.

Structure of MPO

Once the MPO was established, a set of By-laws were adopted to create the structure and the representation on the MPO. The adopted By-laws of the MPO created three (3) committees as follows:

1. **Policy Board –** The Policy Board is comprised of elected officials from the local jurisdictions and representatives from various state and federal transportation agencies. There are eight (8) voting members on the Policy Board and three (3) non-voting members (see board roster for additional information). The Policy Board is responsible for making all of the official decisions of the MPO and annually adopts the Unified Planning Work Program (UPWP) and the Transportation Improvement Program (TIP) as well as other plans and programs as necessary. The Policy Board typically meets monthly.

2. **Technical Advisory Committee –** The Technical Advisory Committee (TAC) is comprised of planners, highway engineers, and other transportation experts. There are fourteen (14) voting members on the TAC (see committee roster for additional information) who review and make recommendations to the Policy Board on all plans and programs to be adopted, conduct special studies at the request of the Policy Board, and generally provide expert transportation advice to the Policy Board. The TAC typically meets monthly.

3. **Citizens Advisory Committee –** The Citizens Advisory Committee (CAC) is comprised of citizens representing the three (3) local jurisdictions that are in the MPO. This includes the City of Winchester, Frederick County, and the Town of Stephens City. There are seven (7) voting members on the CAC (see committee roster for additional information) who represent the views and opinions of the citizens in the MPO area to the Policy Board. The CAC typically meets monthly.

NSVRC staff provides support to the three MPO committees. The Executive Director serves as the Secretary-Treasurer of each committee and Commission staff provides project management, technical assistance, clerical and

administrative support for MPO and Unified Planning Work Program (UPWP) activities and at each meeting including mailings, recordation and transcription of minutes, and documentation of MPO resolutions and other official actions.

Ongoing Activities

The MPO committees meet on their designated dates as necessary and conduct the affairs of the MPO. The MPO adopts the UPWP and budget each April and a listing of all the transportation improvements to receive federal funding in the upcoming fiscal year is adopted each August. Various studies on key corridors in the MPO are ongoing using consultants and VDOT to provide information on the current conditions of the transportation network.

Role of MPO in Regional Transportation Planning

The designation of the Winchester-Frederick County area as an MPO imposes requirements on the region's long-range transportation planning which must conform to the Federal transportation planning requirements (23 CFR 450). The Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) became law August 10, 2005. On February 14, 2007, the Federal Highway Administration (FHWA) and Federal Transit Administration (FTA) released their Statewide and Metropolitan Planning Rule (Vol 72, Federal Register 7224). The final rule revises planning regulations at 23 CFR Parts 450 & 500 and 49 CFR Part 613, interpreting SAFETEA-LU rules and making them effective July 1, 2007. Guidance from SAFETEA-LU and the Statewide and Metropolitan Planning Rule clarify FHWA planning requirements for MPO transportation plans, as well as identifying the required eight planning factors to be included in the plan and the environmental justice requirements in the May 2000 proposed rule on environmental justice and streamlining.

Per federal metropolitan transportation planning requirements, an MPO is responsible for the development of a transportation plan addressing at least a twenty-year planning horizon. The plan shall include both long-range and short-range strategies/actions that lead to the development of an integrated intermodal transportation system that facilitates the efficient movement of people and goods. The transportation plan shall be reviewed and updated at least triennially in non-attainment and maintenance areas and at least every five years in attainment areas to confirm its validity and its consistency with current and forecasted transportation and land use conditions and trends and to extend the forecast period. The transportation plan must be approved by the MPO.

The Win-Fred MPO's planning processes are carried out in coordination with statewide transportation planning processes. Following are some examples of this coordination.

The Win-Fred MPO is not required to develop a Coordinated Human Services Transportation Plan. However, several FTA grant programs require a Coordinated Human Services Transportation Plan be developed, and SAFETEA-LU requires that it be coordinated and consistent with the MPO planning process. The Virginia Department of Rail and Public Transportation (DRPT) has developed a statewide plan and continues to assist planning districts throughout Virginia in developing local and regional plans. Development of this Coordinated Human Services Transportation Plan will be coordinated with the Win-Fred MPO.

The Win-Fred MPO transportation planning process is, to the maximum extent practicable, consistent with the development of applicable regional intelligent transportation systems (ITS) architectures. The Win-Fred MPO works with VDOT to improve and enhance the operation of these systems and strategies, and considers these systems during development of major plans and programs such as TIP, UPWP, and Long Range Plan.

The Win-Fred MPO transportation planning process is consistent with Virginia's Strategic Highway Safety Plan, and other transit safety and security planning and review processes, plans, and programs, as appropriate. Virginia has developed this safety plan as required by SAFETEA-LU, which focuses on prevention of crashes as well as reducing fatal and injury crash rates. MPO plans and programs consider elements and strategies of this statewide safety plan in order to effectively implement them within our MPO urbanized area and help achieve everyone's desired goal of reducing injuries and deaths related to crashes. This 2035 Long Range Transportation Plan and other MPO plans and programs consider these statewide safety elements and strategies.

Specific Transportation Plan Requirements

Per SAFETEA-LU, an MPO transportation plan shall be prepared to address the following eight planning factors:

1. Support the economic vitality of the metropolitan planning area, especially by enabling global competitiveness, productivity, and efficiency,
2. Increase the safety of the transportation system for motorized and non-motorized users,
3. Increase the security of the transportation system for motorized and non-motorized users.
4. Increase the accessibility and mobility options available to people and freight,
5. Protect and enhance the environment, promote energy conservation, and improve quality of life, and promote consistency between transportation improvements and State and local planned growth and economic development patterns.

6. Enhance the integration and connectivity of the transportation system, across and between modes, for people and freight,
7. Promote efficient system management and operation, and
8. Emphasize the preservation of the existing transportation system.

Transportation Plans

The previously adopted transportation plan for the Winchester/Frederick County area is the 2030 Long Range Transportation Plan, developed for the Win-Fred MPO in 2005. The 2030 plan reviewed the existing conditions of the transportation network and resources and provided a prioritization of projects for the MPO area. The plan included analysis of traffic data and created future forecasts of traffic volumes based on future land use and economic development trends.

Chapter 2 Plan Goals and Objectives

Introduction

Goals and Objectives were established and carried forward from the 2030 plan to guide the development of the updated 2035 Transportation Plan. These goals were initially developed by the TAC by evaluating the three existing comprehensive and transportation plans for the member jurisdictions and developing a consolidated, yet complimentary set of goals and objectives for the MPO to guide the development of the 2035 Transportation Plan and more generally, the evaluation of regional transportation within the Win-Fred MPO.

Transportation Plan Goals and Objectives

1. Incorporate the established Goals and Objectives from each member jurisdiction (City of Winchester, Frederick County, and Town of Stephens City).

2. Establish regional transportation priorities in recognition of the different viewpoints of the member jurisdictions, as the MPO process requires regional decision-making/consensus.

3. Build on the Winchester area's historical role as a crossroads and marketplace by improving the regional transportation system to service both local and through traffic.

    a. Support the improvement of the I-81 corridor, but with consideration of local access needs, such as collector-distributor roadways, corridor safety, and interchange improvements.

    b. Improve or replace existing I-81 interchanges that cannot meet current travel demands and VDOT design standards.

    c. Continue major roadway expansion to improve the connectivity of the regional roadway system (including the Route 277 and 37 corridors and the Hope Drive/Tevis Street extension).

    d. Decrease the region's reliance on the I-81 corridor for local travel through the improvement of existing primary and secondary roads or the construction of new roads.

4. Anticipate the growth of the industrial market and the growth of the nearby Inland Port through transportation improvements that manage industrial access and increase freight rail service.

    a. Improve road and rail access to existing industrial parks and other major freight generators, such as the Winchester Regional Airport and the

Virginia Inland Port, evaluate and designate regional truck routes to manage freight traffic.

5. Provide a safe and efficient road system within the MPO region.

    a. Focus improvement efforts on high-crash locations and roadways with recurring congestion.
    b. Prioritize the preservation and improvements to existing roadway and bridge infrastructure
    c. Reduce public costs resulting from traffic congestion caused by new development.
    d. Prioritize transportation system integration for any new development.
    e. Provide new road improvements that support and prioritize the functional use of secondary and primary roadways through the use of access management principles and land use controls.
    f. Provide alternatives to through travel on neighborhood streets to prevent speeding and protect the character of residential communities.
    g. Improve existing railroad crossings to improve safety for trains, vehicles, cyclists and pedestrians.

6. Encourage the use of alternate modes of transportation such as bicycling, walking, carpooling and ridesharing, public transit, air, and rail.

    a. Expand the system of shared use trails and sidewalks that provide safe and convenient access between activity centers and residential areas.
    b. Review the needs for multimodal transfer facilities including park and ride facilities.
    c. Consider the need for access and parking improvements needed to support the resumption of rail passenger service to the region.
    d. Expand the public transit system utilizing both fixed routes and para-transit routes to urban and suburban locations, with emphasis on serving special needs and elderly populations.
    e. Develop transportation improvements that enhance connectivity throughout the region and encourage the use of a full range of transportation options.

7. Provide a transportation network that is sensitive to the region's environment.

    a. Ensure the protection of environmentally sensitive areas from road and rail development.

b. Incorporate context sensitive design principals into transportation projects.

c. Reduce vehicle emissions by encouraging multimodal transit options and decreasing vehicle idle time consistent with the principles to support the long-term improvement of air quality.

8. Provide land use patterns that maximize the efficiency of the transportation network.

a. Promote diverse land use patterns that maximize opportunities for multimodal transportation.

b. Ensure future land use decisions are responsive to the region's transportation network.

Chapter 3 Plan Process and Public Involvement

The development of the Win-Fred MPO 2035 transportation plan has been conducted in accordance with the Win-Fred MPO Public Involvement Plan (PIP), adopted by the Win-Fred MPO Policy Board. The PIP purpose is to provide a process that ensures opportunities for the public to be involved in all phases of the urban transportation planning process. In support of this purpose, the Win-Fred 2035 Transportation Plan has included several opportunities for public input.

Public Information Meetings

Public Kickoff Meeting

A public kickoff meeting on the Win-Fred 2035 Transportation Plan was conducted on May 12, 2009 at in the City of Winchester. Newspaper and radio advertisements were made in advance of this meeting. MPO officials and NSVRC staff were present to answer questions. A PowerPoint presentation was in constant display, providing an introduction into the transportation planning process, the requirements of the 2035 transportation plan, and a request for feedback. Public comment sheets were provided and the public was encouraged to identify key transportation issues and areas of interest to staff.

Public Review and Comment on Draft Long-Range Plan

Before the Win-Fred MPO 2035 Transportation can be adopted, there must be the opportunity for public review and comment. The draft long-range plan was made available for viewing at the following locations from March 26, 2012 through April 14, 2012:

- Win-Fred MPO website www.winfredmpo.org
- Winchester City Hall – Planning Department Office
- Frederick County Offices – Department of Planning and Zoning
- Stephens City – Town Hall
- Handley Public Library - Downtown
- Handley Public Library - Bowman

Draft Long-Range Plan Meetings

A series of presentations on the 2035 Transportation draft document were presented by Win-Fred MPO staff as follows:

- March 6, 2012 – Stephens City Town Council
- March 29, 2012 – CAC & Public Meeting
- April 10, 2012 –Winchester City Council
- April 11, 2012 – Frederick County Board of Supervisors

A copy of this presentation and the comments received at these meetings are provided in the Technical Appendix to this report.

Public Workshops/Neighborhood Meetings

Recognizing that a traditional public information meeting approach does not always reach all MPO users, a more-focused approach was conducted to provide outreach to populations typically underserved or underrepresented. This additional outreach was conducted in compliance with federal environmental justice guidelines targeting lower-income and minority populations. More detail on the study's approach to environmental justice is provided in Chapter 7.

Neighborhood Meetings & Public Workshops

A neighborhood meeting was held in the City of Winchester as follows:

- Thursday, March 29, 2012 – Our Health, 329 N. Cameron Street, Winchester, Virginia

For this meeting/workshop, information on the draft plan was provided, and representatives from the Transportation Plan study team were available to respond to questions on the draft plan.

In addition, outreach was made with interested advocacy groups to discuss the 2035 Transportation Plan, and to obtain input on regional or local transportation concerns and issues.

Advertised, Regular MPO Meetings

The Win-Fred MPO conducts monthly meetings of its three committees, and all meetings are advertised and open to the public. These committees include: the Policy Board; the Technical Advisory Committee (TAC) month, and the Citizens Advisory Committee (CAC). Schedules are subject to variation from time to time, depending on the agenda, and meetings can be cancelled if pressing issues are not on the agenda or if a quorum of committee/board members is not possible.

Advertisements for each committee/board meeting are made in the Winchester Star, at least two weeks in advance. In addition, the meeting schedule is regularly updated on the Win-Fred MPO website. Below is the history of MPO Meetings held during the LRTP update, all MPO meetings are open to the public.

Win-Fred MPO Technical Advisory Committee

- December 1st 2009- LRTP Update: Comments from jurisdictions regarding updating the CLRP requested
- January 5th 2010-LRTP Update: Draft Vision List handed out, reviewed, and discussed.
- February 2nd 2010-Review and Discussion of Draft Vision Plan List of Projects
- March 2nd 2010- LRTP Update: Policy Board endorsed Vision Plan list
- April 6th 2010-LRTP Update: Draft Vision Plan list of projects and draft map handed out for review and comments
- May 11th 2010-LRTP Update: Progress Report given on LRTP Update
- June 1st 2010- LRTP Update: Draft Vision Project Cost Spreadsheet discussed
- August 10th 2010-LRTP Update: Selecting and prioritizing projects for the fiscally Constrained Plan discussed.
- September 7th 2010-Description and cost estimates for new projects included in the LRTP Vision List requested.
- February 15th 2011- LRTP Update
- March 7th 2011- LRTP Update-Timeline handed out
- June 7th 2011-Constrained Long Range Transportation Plan 2035 Update
- July 12th 2011-2035 CLRP Draft Vision List and Candidate Projects reviewed and discussed
- September 6th 2011-2035 CLRP Draft Vision List and Candidate Projects discussed with the designation of candidate CLRP projects selected by the Project Steering Committee
- December 6th 2011-CLRP modeling update

MPO Policy Board

- January 20th 2010-LRTP Update-Vision Plan List of projects for review and discussion handed out
- February 24th 2010-LRTP Update-Draft Vision Plan List of Projects and Map reviewed and discussed. Vote to endorse Draft Vision List.
- March 17th 2010-LRTP Update: next step is CLRP modeling
- April 21st 2010-LRTP Update
- June 16th 2010-LRTP Update
- May 18th 2011-LRTP Update
- June 29th 2011-CLRP Update: CLRP project timeline approved
- August 17th 2011-CLRP Update
- September 21st 2011-Presentation of the WinFred MPO CLRP
- December 14th 2011-Update on CLRP

MPO Citizens Advisory Committee

- April 14th 2009-LRTP Update
- March 9th 2010-LRTP Update
- August 10th 2010-LRTP Update
- March 8th 2011-LRTP Update
- May 8, 2012-LRTP Update

Development of MPO Website

The Win-Fred MPO website, www.winfredmpo.org, was developed to provide another way for the public to gain access to information on the MPO and the 2035 Long Range Transportation Plan. The website was originally developed in Summer, 2004, reviewed and approved by the Win-Fred MPO TAC and Policy Board went online in September, 2004. This website provides information on the reason for the formation of the Win-Fred MPO, the federal laws and requirements governing metropolitan transportation planning, the schedule for completion of the 2035 Transportation Plan, and a forum for providing e-mail comments. As mentioned above, the home page provides information on upcoming meetings with date, time and location, and a downloadable ".pdf" file containing the meeting agenda. Also available on the website are meeting notes from recent meetings and relevant plans and studies conducted throughout the year. This website is continuously maintained by the Win-Fred MPO and updated on regular intervals.

The Draft 2035 Transportation Plan document was provided on the www.winfredmpo.org web-site and in response to any e-mail requests in .pdf file format throughout the public comment period March 26, 2012 through April 14, 2012. The final version of the plan document and a 2035 Plan Map will be maintained on the Win-Fred MPO website.

Environmental Consultation

SAFETEA-LU requires MPO transportation plans (CLRPs) to be developed, as appropriate, in consultation with Federal, State and local resource agencies responsible for land use management, natural resources, environmental protection, conservation, and historic preservation management. The consultation shall involve, as appropriate, comparing available plans, maps or inventories. The 2035 Plan and proposed Amendment was advertised for public comment, input was requested from an MPO list of resource agencies. Appendix G summarizes the Environmental Consultation Process during the approval of the Plan, including the list of "resource agencies", a copy of the letter sent to these interested parties, a summary of comments and information received from resource agencies, and a comparison of the 2035 Plan with any plans, maps and inventories received from these resource agencies.

SAFETEA-LU Public Participation

SAFETEA-LU requires that MPOs provide citizens and interested parties with a reasonable opportunity to comment on the transportation plan. The Win-Fred MPO has developed a contact list of interested parties. The 2035 Plan and proposed Amendment was advertised for public input for a 20 day public comment period. As described in the Win-Fred MPO Public Participation Process, input was requested from a list of interested parties in the Win-Fred MPO urban area. Appendix A contains the results of this public participation process, including the MPO list of interested parties, a copy of letter requesting public comment, and a summary of comments received from interested parties.

Plan Adoption

At the conclusion of the public comment period for the draft 2035 Transportation Plan, the Win-Fred Policy Board adopted the final 2035 Transportation Plan. The plan was adopted on May 16, 2012. Prior to adoption, the Win-Fred Policy Board on May 16, 2012 discussed comments received during the public comment period. These comments are included in Appendix A.

Chapter 4 Existing Transportation Conditions

Introduction

The first step in the development of a long-range transportation plan is the documentation of existing transportation conditions. This chapter summarizes the results of data collection efforts, field observations, review of previously conducted transportation studies in the MPO region, and public comments. The adequacy of the transportation system is qualitatively assessed. The 2035 Transportation Plan will be multi-modal; designed to accommodate travel in the region made not only by auto drivers but also by car/van-pool, transit riders, bicyclists and pedestrians. Understanding the proportion of the travel that is likely to use each of these modes is important in order to plan for facilities and services to meet expected demands and to properly recognize the interactions between travel modes.

Study Area

The MPO includes the City of Winchester, the town of Stephens City, and the urbanized portions of Frederick County. The boundaries help define census tracts and block groups for data collection and assist VDOT in its traffic demand modeling of existing and future traffic conditions.

Travel Demand Model Development

In order to forecast travel on the future transportation network, and to be consistent with metropolitan planning practices in larger urban areas, a travel demand model was developed for the Win-Fred MPO region. The use of a travel demand model is used by metropolitan areas to forecast future transportation growth and to estimate where future deficiencies will occur or the extent to which existing deficiencies will increase.

The model was developed by VDOT using the TP+/CUBE software for analysis of the existing and future roadway network. In order to develop a travel model that could forecast future traffic volumes with some level of confidence, the model was calibrated to simulate existing conditions. The model was structured to evaluate future year daily and peak period traffic volumes. While there are many components to building a travel demand model, this chapter provides information on the development on some of the more critical work efforts:

- Land use and demographics
- Roadway network
- Existing traffic counts
- Travel surveys

The following sections describe some of the data collection efforts conducted in order to create the model.

Transportation/Land Use Connections

There is a strong connection between transportation and land use. The development of land leads to the need for transportation improvements as much as the construction of a new road can lead to increased land speculation and development. The travel demand modeling process recognizes this, and starts with how existing land use is populated and used. This includes the examination of population, households and employment. In addition, other demographic information was considered, such as average household size, income, and auto ownership. The starting point for the evaluation of land use data was the 2010 U.S. Census and the existing land use maps from the jurisdictions. Households, population and employment were updated to include estimates for a 2007 base year of the model.

Traffic Analysis Zones

In order to quantify land use data and other demographic characteristics into a travel demand model, the data was aggregated into smaller land use parcels that could be accessed from the regional road network. Traffic analysis zones were developed for

this study primarily using census tracts and block groups. In addition, TAZ boundaries may occur at natural boundaries, such as streams and hills, but also at

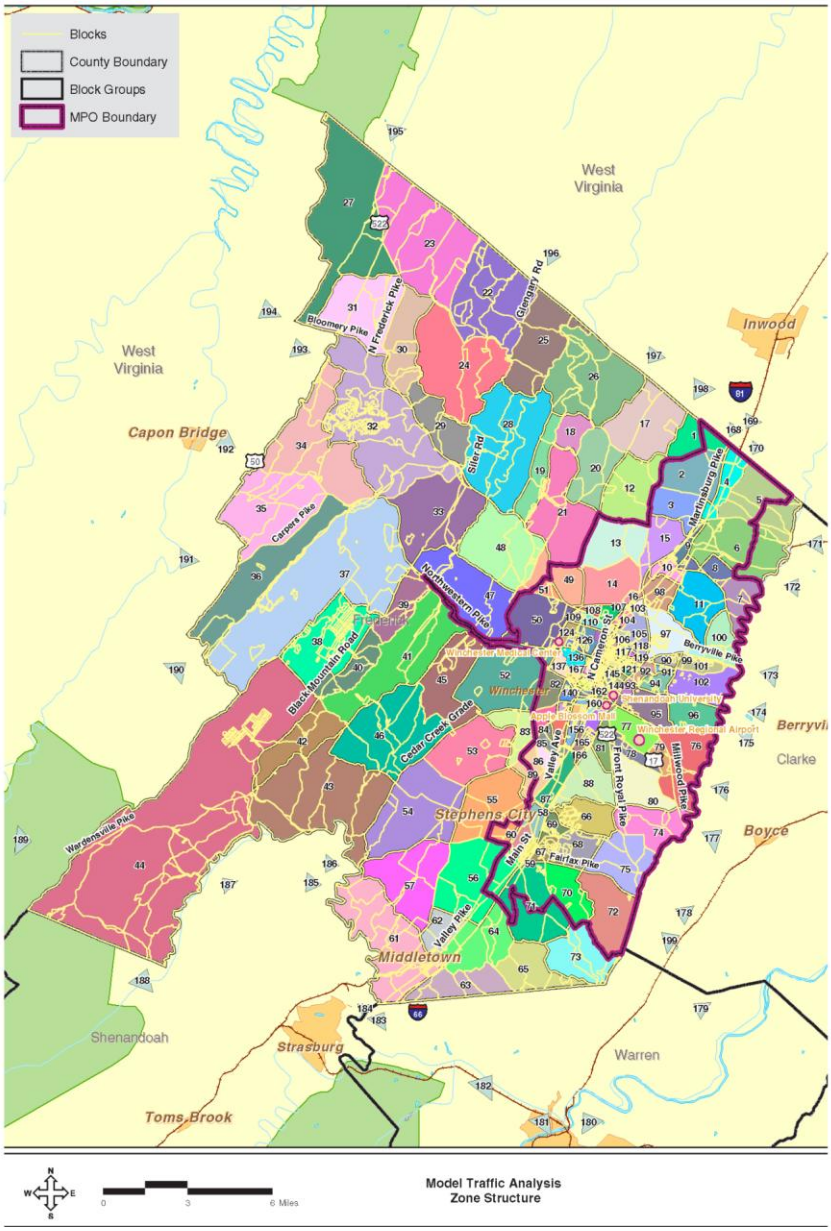


Figure 4-1: Winchester Regional Model Traffic Analysis Zones

man-made boundaries (streets, freeways, and different land uses). It was important to maintain consistency with U.S. Census geography, as many of the trip-making parameters of the MPO population came directly from U.S. Census data. The selection of TAZs for the Win-Fred MPO 2035 Transportation Plan were developed in consultation with planning staff from the City of Winchester, the Town of Stephens City, and Frederick County and also with the Win-Fred MPO Technical Advisory Committee.

Figure 4-1 displays the TAZ structure selected for this study. A more detailed discussion of the travel demand model process is described in a separate technical report. In total, the travel demand model contained 167 TAZs, with 119 TAZs located within the MPO boundaries.

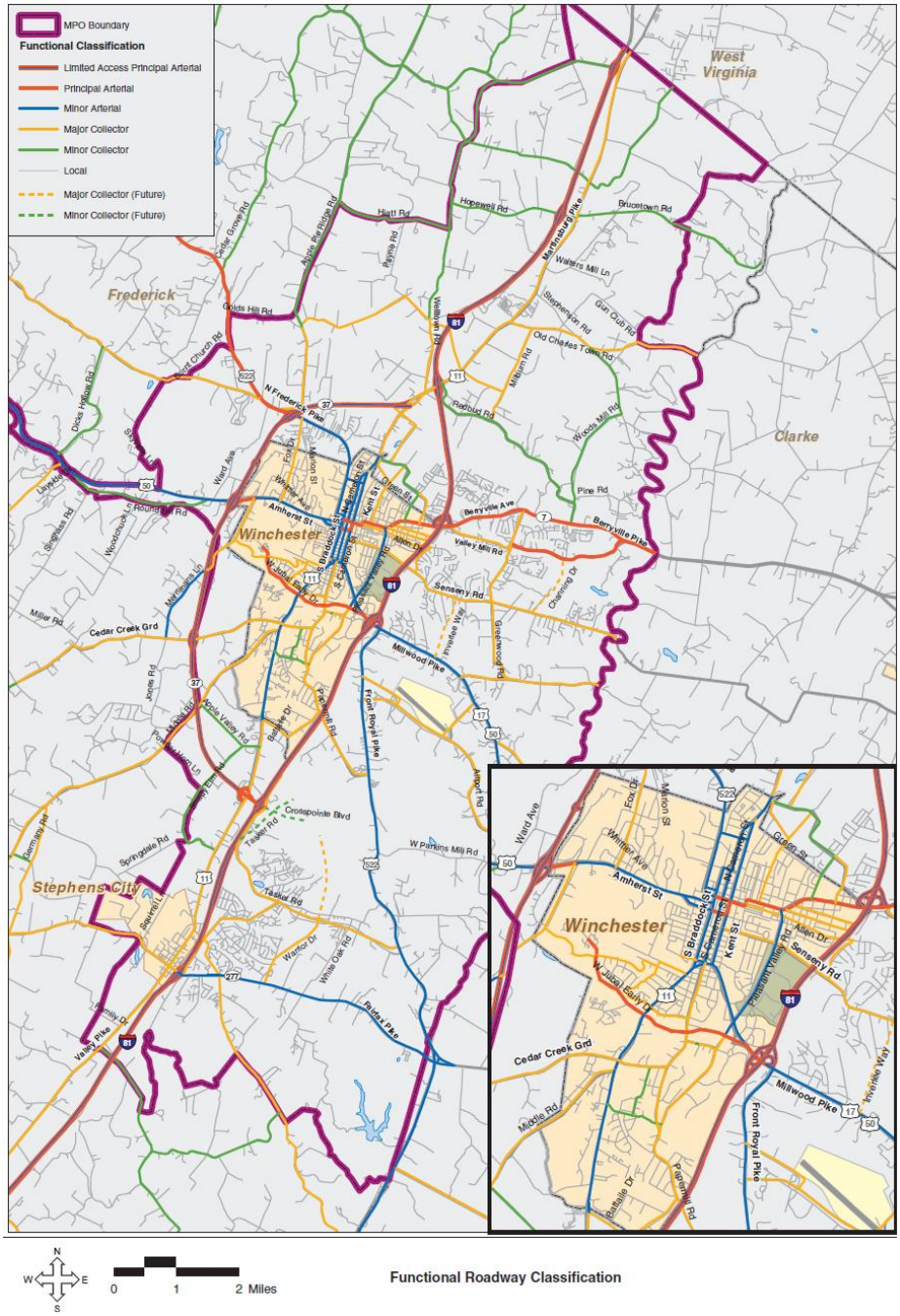


Figure 4-2: Win-Fred MPO Roadway Functional Classifications

Population and Households

Existing population and household data was obtained directly from the 2010 U.S. Census. The year 2010 numbers were then projected to 2035 conditions based on provisional estimates for the region as shown in **Table 4-1**. **Figure 4-4** displays existing year 2010 population density data. This information was reviewed by planning staff from the City of Winchester, the Town of Stephens City, Frederick County, and the Win-Fred MPO Technical Advisory Committee.

Table 4-1: Total Population in Winchester/Frederick County

Area	2000 Population	2010 Population	2035 Population*
City of Winchester	23,585	26,203	33,475
Frederick County-MPO Portion	39,005	59,744	139,158
Total MPO	**62,590**	**85,947**	**172,633**
Frederick County – Non-MPO Portion	20,204	18,561	14,787
Winchester and Frederick County Total	**82,794**	**104,508**	**187,420**

*Note: 2010 Census information provided by American Fact Finder 2010 Census Redistricting Data Set (2011). 2035 population was estimated using a straight-line projection between 2000 Census and 2010 estimates projected to 2035 then aggregated. 2009 Households were included as no accurate household count for 2010 was available at time of writing.

Employment

Employment is the more difficult demographic to quantify. This information is not provided in the 2010 U.S. Census. The primary data source for employment data was obtained from the Virginia Employment Commission (VEC). Significant work was conducted to allocate regional employment to each TAZ, and this effort is described in more detail in the Travel Demand Model Documentation Report. A summary of total employment by jurisdiction projected to 2035 is shown below in **Table 4-2**. This information was reviewed by planning staff from the City of Winchester, the Town of Stephens City Frederick County, and the Win-Fred MPO Technical Advisory Committee.

Table 4-2: Employment by Jurisdiction – 2003 to 2035

Area	2003 Employment	2010 Employment	2035 Employment
City of Winchester	26,600	23,499	20,760
Frederick County-MPO Portion	17,247	18,820	20,536
Total MPO	**43,847**	**42,319**	**40,844**
Frederick County – Non-MPO Portion	3,408	4,679	6,424
Winchester and Frederick County Total	**47,255**	**46,998**	**88,564**

Note: 2010 estimate of employment was provided primarily by the Virginia Employment Commission, using the BLS Quarterly Census of Employment and Wages (*as of September 2010-Projected*). 2035 Population was determined using a straight-line projection.

Regional Traffic Volumes and Patterns

In order to plan for a future transportation system, it is critical to understand how the existing transportation network functions, where existing traffic congestion occurs and where travel desires of transportation users are not being adequately served. Data collection was conducted in the areas of:

- Physical inventory of the existing transportation systems (lanes, signals, speed limits, bus routes)
- Traffic volumes (daily)
- Vehicular crash data on area roadways
- Regional travel patterns
- Existing transit services
- Rail and aviation services
- Bicycle and pedestrian facilities

Functional Classification of Roadways

Functional classification is the process by which streets and highways are grouped into classes, or systems, according to the character of traffic service that they are intended to provide. There are three highway functional classifications: arterial, collector, and local roads. All streets and highways are grouped into one of these classes, depending on the character of the traffic (i.e., local or long distance) and the degree of land access that they allow. These classifications also provide different degrees of mobility and land access as shown below in **Table 4-3**.

Table 4-3: Roadway Function Classification Role

Roadway Functional Classification	Mobility	Access Control
Arterials	High	High
Collectors	Moderate	Moderate
Local Streets	Low	Low

These classes are often further stratified into major and minor sub-categories, as appropriate. **Figure 4-3** provides a graphic showing the functional classification of the MPO region's roadways. **Table 4-4** shows the breakdown of the MPO region's roads by functional classification.

Table 4-4: Functional Classification of Win-Fred MPO Roadways

Functional Classification	Lane-Miles	Percent of Total Road Lane-Miles
Limited-Access Principal Arterials	206	11.7%
Principal Arterials	125	7.1%
Minor Arterials	189	10.8%
Major Collectors	315	18.0%
Minor Collectors	329	18.8%
Local Streets	590	33.6%
Total	**1,754**	**100.0%**

Data Collection/Existing Traffic Volumes

A detailed traffic data collection was provided through the 2010 Average Annual Daily Trips (AADT) by jurisdiction released annually by VDOT. Actual Average Annual Daily traffic volumes are displayed in **Table 4-5**. **Table 4-7** provides a detailed summary of daily and peak hour traffic volumes using the VDOT Win-Fred MPO Model.

Table 4-5 column/attribute notes are as follows:

a) Physical Jurisdiction: FC = Frederick County; CW = City of Winchester; TC = Town of Stephens City
b) AADT: average annual daily traffic expressed in vehicles per day
c) Average percent of daily traffic that is trucks and busses combined
d) K Factor: percent of daily traffic that occurs during the peak period
e) Dir. Dist.: directional distribution of peak period traffic
f) AADT – Link Pair: these are one way links that have one-way pairs for example a northbound segment of I-81 and should be paired to get total two-way traffic count totals

Table 4-5: Summary of 2010 Roadway Link Volumes including AADT & Truck Percentage

Roadway Link Description	Phys. Juris. [a]	AADT [b]	Percent Trucks & Busses [c]	K Factor [d]	Dir. Dist [e]	Data Year	AADT - Link Pair [f]
US 17 Millwood Pike from US 522 Front Royal Pike to ECL Winchester	FC	37000	5%	8.2%	0%	2010	
US 50 Millwood Pike from ECL Winchester to US 522 Front Royal Pike	FC	37000	5%	8.2%	0%	2010	
US 522 Millwood Pike from US 17, US 50 Millwood Pike to ECL Winchester	FC	37000	5%	8.2%	0%	2010	
US 11 Martinsburg Pike from SR 37 Winchester Bypass to I-81 North of Winchester	FC	36000	8%	9.0%	52%	2010	
I-81 NB from NCL Winchester to SR 7 Berryville Pike	FC	30000	21%	9.7%	100%	2010	60000
I-81 SB from NCL Winchester to SR 7 Berryville Pike	FC	30000	20%	9.5%	100%	2010	60000
I-81 NB from SCL Winchester to NCL Winchester	FC	30000	21%	9.8%	100%	2010	60000
I-81 NB from SCL Winchester to NCL Winchester	FC	30000	21%	9.7%	100%	2010	60000
I-81 SB from SCL Winchester to NCL Winchester	FC	30000	20%	9.5%	100%	2010	60000
I-81 SB from SCL Winchester to NCL Winchester	FC	30000	20%	9.5%	100%	2010	60000
I-81 NB from US 17, US 50 Millwood Ave to SCL Winchester	FC	30000	21%	9.7%	100%	2010	60000
I-81 SB from US 17, US 50 Millwood Ave to SCL Winchester	FC	30000	20%	9.5%	100%	2010	60000
I-81 SB from SR 7 Berryville Pike to US 11 Martinsburg Pike	FC	29000	20%			2010	57000
I-81 NB from SR 7 Berryville Pike to US 11 Martinsburg Pike	FC	28000	21%			2010	57000
VA 37 Winchester Bypass from 34-622 Cedar Creek Grade to US 50 West of Winchester	FC	28000	5%	9.9%	51%	2010	
VA 37 Winchester Bypass from US 50 West of Winchester to US 522 NW of Winchester	FC	28000	5%	8.2%	0%	2010	

Roadway Link Description	Phys. Juris. [a]	AADT [b]	Percent Trucks & Busses [c]	K Factor [d]	Dir. Dist [e]	Data Year	AADT - Link Pair [f]
VA 37 Winchester Bypass from US 522 NW of Winchester to US 11 North of Winchester	FC	28000	5%	8.4%	0%	2010	
VA 7 Berryville Pike from I-81; ECL Winchester to Clarke County Line	FC	28000	5%	7.8%	0%	2010	
I-81 NB from SR 277 Fairfax Pike; NCL Stephens City to SR 37	FC	26000	21%	9.3%	100%	2010	53000
I-81 SB from SR 277 Fairfax Pike to SR 37	FC	26000	20%	10.0%	100%	2010	53000
I-81 NB from Shenandoah County Line to I-66, Frederick County Line	FC	26000	25%			2010	51000
I-81 NB from Shenandoah County Maintenance Break to Warren County Line	FC	26000	25%			2010	51000
I-81 SB from Warren County Line to I-66	FC	25000	22%			2010	51000
I-81 SB from Shenandoah County Line to Frederick County Line	FC	25000	22%			2010	51000
I-81 SB from Shenandoah County Maintenance Break to Warren County Line	FC	25000	22%			2010	51000
US 17 Jubal Early Dr from US 50 Par, Millwood Ave to Apple Blossom Dr	CW	25000	3%	9.1%	0%	2010	
US 17 Jubal Early Dr from US 50 Par, Millwood Ave to Apple Blossom Dr	CW	25000	3%	9.1%	0%	2010	
US 17 Millwood Ave from I-81 to Jubal Early Dr	CW	25000	3%	9.1%	0%	2010	
US 17 Millwood Ave from I-81 to Jubal Early Dr	CW	25000	3%	9.1%	0%	2010	
US 50 Jubal Early Dr from Apple Blossom Dr to US 50 Par, Millwood Ave	CW	25000	3%	9.1%	0%	2010	
US 50 Jubal Early Dr from Apple Blossom Dr to US 50 Par, Millwood Ave	CW	25000	3%	9.1%	0%	2010	
US 50 Millwood Ave from US 50 Par; Jubal Early Dr to I-81	CW	25000	3%	9.1%	0%	2010	
US 50 Millwood Ave from US 50 Par; Jubal Early Dr to I-81	CW	25000	3%	9.1%	0%	2010	

Roadway Link Description	Phys. Juris. [a]	AADT [b]	Percent Trucks & Busses [c]	K Factor [d]	Dir. Dist [e]	Data Year	AADT - Link Pair [f]
US 522 Jubal Early Dr from US 50 Par, Millwood Ave to Apple Blossom Dr	-CW	25000	3%	9.1%	0%	2010	
US 522 Jubal Early Dr from US 50 Par, Millwood Ave to Apple Blossom Dr	CW	25000	3%	9.1%	0%	2010	
US 522 Millwood Ave from I-81 to US 50 Par; Jubal Early Dr	CW	25000	3%	9.1%	0%	2010	
US 522 Millwood Ave from I-81 to US 50 Par; Jubal Early Dr	CW	25000	3%	9.1%	0%	2010	
VA 7 Berryville Ave from Ross St to I-81; ECL Winchester	FC	25000	3%	8.7%	0%	2010	
VA 7 Berryville Ave from Ross St to I-81; ECL Winchester	FC	25000	3%	8.7%	0%	2010	
I-81 NB from 34-627 Reliance Rd to SCL Stephens City	FC	24000	21%	9.7%	100%	2010	48000
I-81 NB from SCL Stephens City to SR 277 Fairfax Pike; NCL Stephens City	FC	24000	21%	9.7%	100%	2010	48000
I-81 NB from SCL Stephens City to SR 277 Fairfax Pike; NCL Stephens City	TC	24000	21%	9.7%	1.0000	2010	48000
I-81 SB from NCL Stephens City to SR 277 Fairfax Pike	FC	24000	20%	10.1%	100%	2010	48000
I-81 SB from SCL Stephens City to NCL Stephens City	FC	24000	20%	10.1%	100%	2010	48000
I-81 SB from SCL Stephens City to NCL Stephens City	TC	24000	20%	10.1%	1.0000	2010	48000
I-81 SB from 34-627 Reliance Rd to SCL Stephens City	FC	24000	20%	10.1%	100%	2010	48000
I-81 NB from SR 37 to US 17, US 50 Millwood Ave	FC	24000	21%	9.3%	100%	2010	47000
I-81 SB from SR 37 to US 17, US 50 Millwood Ave	FC	24000	20%	9.9%	100%	2010	47000
I-81 NB from 34-672 Hopewell Rd to 34-669 Rest Church Rd	FC	23000	26%	10.2%	100%	2010	46000
I-81 SB from 34-672 Hopewell Rd to 34-669 Rest Church Rd	FC	23000	25%	9.4%	100%	2010	46000
I-81 SB from I-66 to 34-627 Reliance Rd	FC	23000	20%	10.2%	100%	2010	46000
I-81 NB from US 11 Martinsburg Pike to 34-672 Hopewell Rd	FC	23000	26%	10.1%	100%	2010	46000
I-81 SB from US 11 Martinsburg Pike to 34-672 Hopewell Rd	FC	23000	25%	9.3%	100%	2010	46000

Roadway Link Description	Phys. Juris. [a]	AADT [b]	Percent Trucks & Busses [c]	K Factor [d]	Dir. Dist [e]	Data Year	AADT - Link Pair [f]
138-5213 Pleasant Valley Rd from Jubal Early Drive to Millwood Ave	CW	23000	2%	6.5%	0%	2010	
138-5213 Pleasant Valley Rd from Jubal Early Drive to Millwood Ave	CW	23000	2%	6.5%	0%	2010	
US 522 Frederick Pike North from SR 37 to 34-654 Cedar Grove Rd	FC	23000	13%	8.2%	0%	2010	
I-81 NB from I-66; Warren County Line to 34-627 Reliance Rd	FC	22000	21%			2010	46000
I-81 NB from 34-669 Rest Church Rd to West Virginia State Line	FC	22000	26%	9.4%	100%	2010	44000
138-5213 Pleasant Valley Rd from Millwood Ave to Cork St	CW	22000	2%			2010	
138-5213 Pleasant Valley Rd from Millwood Ave to Cork St	CW	22000	2%			2010	
VA 37 Winchester Bypass from I-81 South of Winchester to 34-622 Cedar Creek Grade	FC	22000	5%	8.7%	0%	2010	
VA 7 Berryville Ave from 138-5213 Pleasant Valley Rd to Ross St	CW	22000	3%	8.4%	0%	2010	
VA 7 Berryville Ave from 138-5213 Pleasant Valley Rd to Ross St	CW	22000	3%	8.4%	0%	2010	
I-81 SB from 34-669 Rest Church Rd to West Virginia State Line	FC	21000	25%	9.7%	100%	2010	44000
138-5213 Pleasant Valley Rd from Papermill Rd to Jubal Early Drive	CW	21000	2%			2010	
138-5213 Pleasant Valley Rd from Papermill Rd to Jubal Early Drive	CW	21000	2%			2010	
US 50 Northwestern Pike from SR 37 to WCL Winchester	FC	21000	1%	8.7%	0%	2010	
138-7 Jubal Early Dr from US 11 Valley Avenue to US 50 Apple Blossom Dr	CW	20000	1%	8.9%	0%	2010	

Roadway Link Description	Phys. Juris. [a]	AADT [b]	Percent Trucks & Busses [c]	K Factor [d]	Dir. Dist [e]	Data Year	AADT - Link Pair [f]
138-7 Jubal Early Dr from US 11 Valley Avenue to US 50 Apple Blossom Dr	CW	20000	1%	8.9%	0%	2010	
US 50 Northwestern Pike from 34-803 Round Hill Rd West to SR 37	FC	20000	4%	8.9%	0%	2010	
US 11 Valley Ave from Middle Rd to Weems Lane	CW	19000	3%			2010	
US 11 Valley Ave from Middle Rd to Weems Lane	CW	19000	3%			2010	
US 17 Millwood Pike from 34-723 Carpers Valley Rd to US 522 Front Royal Pike	FC	19000	5%	8.7%	0%	2010	
US 50 Millwood Pike from US 522 Front Royal Pike to 34-723 Carpers Valley Rd	FC	19000	5%	8.7%	0%	2010	
US 522 Frederick Pike North from 34-654 Cedar Grove Rd to 34-600 Siler Rd	FC	19000	13%	8.4%	0%	2010	
138-5213 Pleasant Valley Rd from Cork St to Berryville Ave	CW	18000	2%			2010	
138-5213 Pleasant Valley Rd from Cork St to Berryville Ave	CW	18000	2%			2010	
US 50 Amherst St from WCL Winchester to Fox Dr	CW	18000	1%	9.0%	0%	2010	
US 50 Amherst St from WCL Winchester to Fox Dr	CW	18000	1%	9.0%	0%	2010	
US 50 Northwestern Pike from 34-614 Back Mountain Rd to 34-803 Round Hill Rd West	FC	18000	4%	8.8%	0%	2010	
US 11 Valley Ave from Weems Lane to Jubal Early Dr	CW	17000	3%			2010	
US 11 Valley Ave from Weems Lane to Jubal Early Dr	CW	17000	3%			2010	
US 11 Valley Pike from SR 37 South of Winchester to SCL Winchester	FC	17000	3%	10.0%	51%	2010	
US 522 Frederick Pike North from 34-600 Siler Rd to SR 127 Bloomery Pike	FC	16000	13%	8.1%	0%	2010	
US 522 Front Royal Pike from 34-642 N; Macedonia Church Rd to 34-644 N, Papermill Rd	FC	16000	14%	8.2%	0%	2010	
US 50 Amherst St from Fox Dr to Boscawen St	CW	15000	1%	8.6%	0%	2010	
US 50 Amherst St from Fox Dr to Boscawen St	CW	15000	1%	8.6%	0%	2010	

Roadway Link Description	Phys. Juris. [a]	AADT [b]	Percent Trucks & Busses [c]	K Factor [d]	Dir. Dist [e]	Data Year	AADT - Link Pair [f]
34-622 Cedar Creek Grade from SR 37 to WCL Winchester	FC	14000	2%	9.0%	0%	2010	
US 11 Valley Ave from SCL Winchester to Middle Rd	CW	14000	3%	8.6%	0%	2010	
US 11 Valley Ave from SCL Winchester to Middle Rd	CW	14000	3%	8.6%	0%	2010	
US 522 Front Royal Pike from 34-644 N, Papermill Rd to US 50 Millwood Pike	FC	14000	14%			2010	
US 522 Front Royal Pike from Clarke County Line to 34-642 N; Macedonia Church Rd	FC	14000	14%	8.5%	0%	2010	
US 522 Stonewall Jackson Hwy from US 340; SR 277 Double Toll Gate to Frederick County Line	FC	14000	14%	7.7%	0%	2010	
VA 277 Fairfax Pike from I-81 to 34-726 Lakeview Circle	FC	14000	6%	9.2%	0%	2010	
138-5200 Cedar Creek Grade from WCL Winchester to Valley Ave	CW	13000	2%	9.5%	0%	2010	
138-5200 Cedar Creek Grade from WCL Winchester to Valley Ave	CW	13000	2%	9.5%	0%	2010	
34-642 Macedonia Church Rd from 34-846 Rutherford Lane to SR 37; 34-847	FC	13000	2%	9.4%	0%	2010	
US 11 Martinsburg Pike from NCL Winchester to SR 37	FC	13000	4%	8.6%	0%	2010	
US 17 Millwood Ave from US 50 Par; Apple Blossom Dr to US 11 Cameron St	CW	13000	3%	8.4%	0%	2010	
US 17 Millwood Ave from US 50 Par; Apple Blossom Dr to US 11 Cameron St	CW	13000	3%	8.4%	0%	2010	
US 50 Millwood Ave from US 11 Cameron St to US 50 Par; Apple Blossom Dr	CW	13000	3%	8.4%	0%	2010	
US 50 Millwood Ave from US 11 Cameron St to US 50 Par; Apple Blossom Dr	CW	13000	3%	8.4%	0%	2010	
US 522 Millwood Ave from US 50 Par; Apple Blossom Dr to US 11 Cameron St	CW	13000	3%	8.4%	0%	2010	

Roadway Link Description	Phys. Juris. [a]	AADT [b]	Percent Trucks & Busses [c]	K Factor [d]	Dir. Dist [e]	Data Year	AADT - Link Pair [f]
US 522 Millwood Ave from US 50 Par; Apple Blossom Dr to US 11 Cameron St	CW	13000	3%	8.4%	0%	2010	
138-5209 Loudoun St from Weems Lane to Commerce St	CW	12000	2%			2010	
138-5209 Loudoun St from Weems Lane to Commerce St	CW	12000	2%			2010	
34-642 Tasker Rd from Former 34-647 to 34-846 Rutherford Lane	FC	12000	2%	10.1%	0%	2010	
34-657 Senseny Rd from ECL Winchester to 34-656 Greenwood Rd	FC	12000	2%	9.7%	0%	2010	
US 17 Millwood Pike from Clarke County Line to 34-723 Carpers Valley Rd	FC	12000	5%	8.9%	0%	2010	
US 50 Exit 017B Ramp to I-81 N at Exit 313 from US 50 Millwood Pike to I-81 N	FC	12000	n/a			2010	
US 50 Millwood Pike from 34-723 Carpers Valley Rd to Clarke County Line	FC	12000	5%	8.9%	0%	2010	
US 50 Northwestern Pike from 34-751 E; Gore Rd to 34-614 Back Mountain Rd	FC	12000	4%	8.7%	0%	2010	
US 522 Maple St from NCL Winchester to SR 37	FC	12000	3%	9.5%	0%	2010	
138-5200 Weems Ln from Valley Ave to Papermill Rd	CW	11000	2%	8.6%	0%	2010	
138-5200 Weems Ln from Valley Ave to Papermill Rd	CW	11000	2%	8.6%	0%	2010	
US 11 Martinsburg Pike from I-81 North of Winchester to 34-761 Old Charles Town Rd	FC	11000	10%	9.0%	0%	2010	
US 11 Valley Ave from Jubal Early Dr to US 11 Par Braddock St	CW	11000	2%	9.3%	0%	2010	
US 11 Valley Ave from Jubal Early Dr to US 11 Par Braddock St	CW	11000	2%	9.3%	0%	2010	
US 50 Boscawen St from Amherst St to Braddock St	CW	11000	1%	8.5%	0%	2010	
US 50 Boscawen St from Amherst St to Braddock St	CW	11000	1%	8.5%	0%	2010	

Roadway Link Description	Phys. Juris. [a]	AADT [b]	Percent Trucks & Busses [c]	K Factor [d]	Dir. Dist [e]	Data Year	AADT - Link Pair [f]
US 522 Fairmont Ave from Commercial St to NCL Winchester	CW	11000	3%	10.0%	0%	2010	
US 522 Fairmont Ave from Commercial St to NCL Winchester	CW	11000	3%	10.0%	0%	2010	
138-5204 Senseny Rd from 138-5213 Pleasant Valley Rd to ECL Winchester	CW	10000	1%	9.0%	0%	2010	
138-5204 Senseny Rd from 138-5213 Pleasant Valley Rd to ECL Winchester	CW	10000	1%	9.0%	0%	2010	
138-5209 Papermill Rd from SECL Winchester to Pleasant Valley Rd	CW	10000	2%	8.7%	0%	2010	
138-5209 Papermill Rd from SECL Winchester to Pleasant Valley Rd	CW	10000	2%	8.7%	0%	2010	
34-656 Greenwood Rd from 34-657 Senseny Rd to 34-659 S, Valley Mill Rd	FC	10000	2%	9.9%	0%	2010	
US 11 Gerrard St from Valley Ave to Cameron St	CW	10000	4%	8.7%	0%	2010	
US 11 Gerrard St from Valley Ave to Cameron St	CW	10000	4%	8.7%	0%	2010	
US 11 Martinsburg Pike from US 11 Par, Loudoun St to NCL Winchester	CW	10000	4%	8.6%	0%	2010	
US 11 Martinsburg Pike from US 11 Par, Loudoun St to NCL Winchester	CW	10000	4%	8.6%	0%	2010	
US 17 Apple Blossom Dr from Jubal Early Dr to US 50 Par, Millwood Dr	CW	10000	3%	8.4%	0%	2010	
US 17 Apple Blossom Dr from Jubal Early Dr to US 50 Par, Millwood Dr	CW	10000	3%	8.4%	0%	2010	
US 50 Apple Blossom Dr from US 50 Par, Millwood Dr to Jubal Early Dr	CW	10000	3%	8.4%	0%	2010	
US 50 Apple Blossom Dr from US 50 Par, Millwood Dr to Jubal Early Dr	CW	10000	3%	8.4%	0%	2010	

Roadway Link Description	Phys. Juris. [a]	AADT [b]	Percent Trucks & Busses [c]	K Factor [d]	Dir. Dist [e]	Data Year	AADT - Link Pair [f]
US 50 Gerrard St from Valley Ave to US 11 Cameron St	CW	10000	4%	8.7%	0%	2010	
US 50 Gerrard St from Valley Ave to US 11 Cameron St	CW	10000	4%	8.7%	0%	2010	
US 522 Apple Blossom Dr from Jubal Early Dr to US 50 Par, Millwood Dr	CW	10000	3%	8.4%	0%	2010	
US 522 Apple Blossom Dr from Jubal Early Dr to US 50 Par, Millwood Dr	CW	10000	3%	8.4%	0%	2010	
US 522 Gerrard St from US 522, US 11 Cameron St to US 11 Valley Ave	CW	10000	4%	8.7%	0%	2010	
US 522 Gerrard St from US 522, US 11 Cameron St to US 11 Valley Ave	CW	10000	4%	8.7%	0%	2010	
138-4 Handley Blvd from Braddock St to Washington St	CW	9700	1%	8.8%	0%	2010	
138-4 Handley Blvd from Braddock St to Washington St	CW	9700	1%	8.8%	0%	2010	
138-5204 Cork St from Kent St to 138-5213 Pleasant Valley Rd	CW	9500	1%	8.8%	0%	2010	
138-5204 Cork St from Kent St to 138-5213 Pleasant Valley Rd	CW	9500	1%	8.8%	0%	2010	
VA 7 Piccaddilly St from US 11 Cameron St to East Lane	CW	9400	3%	8.7%	0%	2010	
VA 7 Piccaddilly St from US 11 Cameron St to East Lane	CW	9400	3%	8.7%	0%	2010	
34-659 Valley Mill Rd from SR 7 W, Berryville Pike to 34-658 Brookland Lane	FC	9300	2%	9.4%	0%	2010	
US 11 Par Braddock St from US 11 Valley Ave to Gerrard St	CW	9200	8%	9.6%	0%	2010	12000
US 11 Par Braddock St from US 11 Valley Ave to Gerrard St	CW	9200	8%	9.6%	0%	2010	12000
VA 277 Fairfax Pike from ECL Stephens City to I-81	FC	9200	3%	7.8%	0%	2010	
VA 277 Fairfax Pike from US 11 Main Street to ECL Stephens City	FC	9200	3%	7.8%	0%	2010	

Roadway Link Description	Phys. Juris. [a]	AADT [b]	Percent Trucks & Busses [c]	K Factor [d]	Dir. Dist [e]	Data Year	AADT - Link Pair [f]
VA 277 Fairfax Pike from US 11 Main Street to ECL Stephens City	TC	9200	3%	0.0781	0.0000	2010	
US 50 Par Millwood Ave from US 50 Apple Blossom Dr to US 50 Jubal Early Drive	CW	9100	2%	8.4%	0%	2010	
US 50 Par Millwood Ave from US 50 Apple Blossom Dr to US 50 Jubal Early Drive	CW	9100	2%	8.4%	0%	2010	
US 50 Piccadilly St from Braddock St to Cameron St	CW	8900	3%	8.9%	0%	2010	11000
US 50 Piccadilly St from Braddock St to Cameron St	CW	8900	3%	8.9%	0%	2010	11000
US 522 Piccadilly St from US 11 Cameron St to US 50, SR 7 Braddock St	CW	8900	3%	8.9%	0%	2010	11000
US 522 Piccadilly St from US 11 Cameron St to US 50, SR 7 Braddock St	CW	8900	3%	8.9%	0%	2010	11000
VA 7 Piccadilly St from Braddock St to SR 7 Cameron St	CW	8900	3%	8.9%	0%	2010	11000
VA 7 Piccadilly St from Braddock St to SR 7 Cameron St	CW	8900	3%	8.9%	0%	2010	11000
VA 7 National Ave from Highland Ave to 138-5213 Pleasant Valley Rd	CW	8900	3%	9.2%	0%	2010	
VA 7 National Ave from Highland Ave to 138-5213 Pleasant Valley Rd	CW	8900	3%	9.2%	0%	2010	
138-0 Stewart St from Wolfe St to Boscawen St	CW	8800	n/a	9.2%	0%	2010	
138-0 Stewart St from Wolfe St to Boscawen St	CW	8800	n/a	9.2%	0%	2010	
US 11 Main St from SR 277 Fairfax Pike to NCL Stephens City	FC	8800	5%	8.8%	0%	2010	
US 11 Main St from SR 277 Fairfax Pike to NCL Stephens City	TC	8800	5%	0.0881	0.0000	2010	
US 11 Valley Pike from NCL Stephens City to SR 37 South of Winchester	FC	8800	5%	8.8%	0%	2010	
VA 7 East Lane from Piccadilly St to Fairfax Lane	CW	8600	3%	8.5%	0%	2010	
VA 7 East Lane from Piccadilly St to Fairfax Lane	CW	8600	3%	8.5%	0%	2010	

Roadway Link Description	Phys. Juris. [a]	AADT [b]	Percent Trucks & Busses [c]	K Factor [d]	Dir. Dist [e]	Data Year	AADT - Link Pair [f]
US 50 Northwestern Pike from West Virginia State Line to 34-751 E; Gore Rd	FC	8400	4%	9.6%	0%	2010	
34-644 Papermill Rd from US-522 N, Front Royal Pike to SCL Winchester	FC	8300	3%	9.9%	0%	2010	
US 50 Gerrard St from Braddock St to Valley Ave	CW	8300	3%	8.7%	0%	2010	
US 50 Gerrard St from Braddock St to Valley Ave	CW	8300	3%	8.7%	0%	2010	
US 522 Gerrard St from US 11 Valley Ave to Braddock St	CW	8300	3%	8.7%	0%	2010	
US 522 Gerrard St from US 11 Valley Ave to Braddock St	CW	8300	3%	8.7%	0%	2010	
VA 277 Fairfax Pike from 34-726 Lakeview Circle to US 522 Front Royal Pike	FC	8300	9%	9.2%	0%	2010	
US 522 Frederick Pike North from SR 127 Bloomery Pike to 34-694 Cumberland Trail Rd	FC	8200	13%	12.1%	55%	2010	
138-5204 Cork St from US 11 Cameron St to Kent St	CW	8100	1%	9.1%	0%	2010	
138-5204 Cork St from US 11 Cameron St to Kent St	CW	8100	1%	9.1%	0%	2010	
US 522 Frederick Pike North from 34-694 Cumberland Trail Rd to West Virginia State Line	FC	8000	13%	7.5%	0%	2010	
138-5 Tevis Ave from Valley Ave to Cedarmeade Ave	CW	7700	1%	8.7%	0%	2010	
138-5 Tevis Ave from Valley Ave to Cedarmeade Ave	CW	7700	1%	8.6%	0%	2010	
US 11 Cameron St from Boscawen St to Piccadilly St	CW	7500	4%			2010	14000
US 11 Cameron St from Boscawen St to Piccadilly St	CW	7500	4%			2010	14000
US 50 Cameron St from Piccadilly St to Boscawen St	CW	7500	4%			2010	14000
US 50 Cameron St from Piccadilly St to Boscawen St	CW	7500	4%			2010	14000
US 522 Cameron St from Boscawen St to SR 7 Piccadilly St	CW	7500	4%			2010	14000
US 522 Cameron St from Boscawen St to SR 7 Piccadilly St	CW	7500	4%			2010	14000
VA 7 Cameron St from Boscawen St to Piccadilly St	CW	7500	4%			2010	14000
VA 7 Cameron St from Boscawen St to Piccadilly St	CW	7500	4%			2010	14000

Roadway Link Description	Phys. Juris. [a]	AADT [b]	Percent Trucks & Busses [c]	K Factor [d]	Dir. Dist [e]	Data Year	AADT - Link Pair [f]
I-81 NB Exit 310A Ramp I-81 N Exit 310 to SR 37 from I-81 N to SR 37 Winchester Bypass	FC	7300	n/a			2010	
US 11 Martinsburg Pike from 34-761 Old Charles Town Rd to 34-836 Walters Mill Lane	FC	7300	10%	9.1%	0%	2010	
138-2 Fort Collier Dr from Berryville Ave to NCL Winchester	CW	7200	5%	8.9%	0%	2010	
138-2 Fort Collier Dr from Berryville Ave to NCL Winchester	CW	7200	5%	8.9%	0%	2010	
34-659 Valley Mill Rd from 34-658 Brookland Lane to 34-656 S, Greenwood Rd	FC	7100	2%	9.9%	0%	2010	
US 11 Martinsburg Pike from 34-836 Walters Mill Lane to 34-671 Cedar Hill Rd	FC	7000	10%	9.3%	0%	2010	
34-1322 Ft Collier Rd from ECL Winchester to 34-1200 Baker Lane	FC	6900	n/a			2008	
34-659 Valley Mill Rd from 34-656 N, Greenwood Rd to SR 7 E, Berryville Pike	FC	6800	n/a			2005	
FR 732 Lenoir Dr from Dead End to 34-661 Welltown Rd	FC	6700	n/a			2008	
US 11 Braddock St from Boscawen St to Piccadilly St	CW	6600	4%	8.6%	0%	2010	14000
US 11 Braddock St from Boscawen St to Piccadilly St	CW	6600	4%	8.6%	0%	2010	14000
US 50 Braddock St from Boscawen St to Piccadilly St	CW	6600	4%	8.6%	0%	2010	14000
US 50 Braddock St from Boscawen St to Piccadilly St	CW	6600	4%	8.6%	0%	2010	14000
US 522 Braddock St from US 50 Boscawen St to US 522 Piccadilly St	CW	6600	4%	8.6%	0%	2010	14000
US 522 Braddock St from US 50 Boscawen St to US 522 Piccadilly St	CW	6600	4%	8.6%	0%	2010	14000
VA 7 Braddock St from US 50 Boscawen St to Piccadilly St	CW	6600	4%	8.6%	0%	2010	14000
VA 7 Braddock St from US 50 Boscawen St to Piccadilly St	CW	6600	4%	8.6%	0%	2010	14000
34-647 Aylor Rd from 34-641 Double Church Rd to 34-642 Macedonia Church Rd	FC	6600	2%	10.1%	0%	2010	

Safety

Motor vehicle crash information can provide an indication of the safety of the region's roadways and intersections. The evaluation of motor vehicle crash history highlights locations within the study area that are prone to crashes.. Crash history was obtained from the City of Winchester for roadways within the City and from VDOT for the primary roadway system. Intersections with 5 or more crashes from 2007-2009 are summarized below in **Table 4-6**.

The top ten locations are identified below. Four of the top ten locations were located in the Pleasant Valley Road/Jubal Early Drive commercial district within the City of Winchester as highlighted in bold print:

- I-81 at Route 37 (South End, Exit 310)
- I-81 (Exit 313) at US 17/50/522
- I-81 (Exit 317) at US 11
- Pleasant Valley Road at Jubal Early Drive
- US 11 / Route 661 / Route 839
- Pleasant Valley Road at Millwood Avenue
- Pleasant Valley Road at Featherbed Lane
- Jubal Early Drive at Apple Blossom Drive
- Route 37 at Route 622
- Route 7 at Valley Mill Road

The intersection of Routes 37 with I-81 at it's south end interchange (Exit 310) had the highest crash experience in Frederick County with a total of 46 crashes from 2007-2009.

The intersection of US 11 at I-81 Exit 317 experienced the most amount of injuries with 32 reported over the three-year period evaluated. One fatality was noted, at the intersection of Route 37 and Route 622. Two pedestrian injuries were recorded at I-81 (Exit 313) at US 17/50/522.

Table 4-6: Intersection Crash Data Summary 2007-2009 (5 or more crashes)

Intersection Crash Data Summary for a Three-Year Period (2007-2009)														
Intersection	TYPE	COUNTY / CITY		Crash Type						Crash Severity			
			Total Crashes	Rear End	Angle	Sideswipe	Hit Fixed Object	Non-Collision	Hit Animal	Fatalities	Pedestrian Injuries	Vehicular Injuries (People)	Property Damage Crash Only
Rte. 37/Rte. 81 (SOUTH END)		County(34) North	46	18	11	4	7	3	2	0	0	30	25
Rte. 50/Rte. 81	Intechange	County (34)	44	24	4	7	5	2	0	0	2	16	28
Rte. 11/Rte. 81	Interchange	County (34)	37	16	11	6	3	1	0	0	0	32	19
Pleasant Valley/ Jubal Early Drive		City (138)	35	10	18	3	Ped	1	1	-	1	15	-
Rte. 11/Rte. 661/Rte. 839		County (34)	33	12	15	2	3	0	0	0	0	19	22
Pleasant Valley/Millwood Avenue		City (138)	31	7	18	4	Head	-	-	-	-	16	-
Pleasant Valley/Featherbed Lane		City (138)	21	2	15	3	1 Head On	-	-	-	-	6	-
Jubal Early Drive/Apple Blossom Drive		City (138)	21	5	15	1	-	-	-	-	-	9	-
Rte. 37/Rte. 622		Conty(34)	21	6	7	3	2	1	0	1	0	15	12
Rte. 7/Valley Mill Road	T-Intersection (3-leg)	County (34)	14	7	3	1	2	1	0	0	0	13	5
Jubal Early Drive/Valley Avenue		City (138)	13	1	8	1	Cyclist	-	-	-	-	14	-
Jubal Early Drive/Loudoun St.		City (138)	13	3	10	-	-	-	-	-	-	2	-
Berryville/Battle/Woodland Aves.		City (138)	11	4	5	-	2 Head On	-	-	-	-	10	-
Valley Ave./Weems Ln./Cedar Creek Grade		City (138)	10	3	6	1	-	-	-	-	-	5	-
Rte. 7/Blossom Drive	Regular-4 Leg Intersection	County (34)	10	6	4	0	0	0	0	0	0	2	8
Rte. 7/Woods Mill Road	T-Intersection (3-leg)	County (34)	8	0	6	1	0	0	1	0	0	3	6
Pleasant Valley/National Ave.		City (138)	6	-	6	-	-	-	-	-	1	2	-
Rte. 50/Rte. 655	T-Intersection (3-leg)	County (34)	6	1	5	0	0	0	0	0	0	1	5
Pleasant Valley/Woodstock Lane		City (138)	5	2	3	-	-	-	-	-	-	1	-

Travel Patterns

Understanding regional travel patterns is essential to developing an understanding of the overall regional transportation network. Network deficiencies are defined as locations where the volume on desired travel patterns exceeds the capacity provided.

Census Origin/Destination Data

The U.S. Census provides detailed journey to work data for all metropolitan areas; unfortunately, at the time of the 2010 U.S. Census, the Winchester area was not officially classified as a metropolitan area. Therefore, the data that was used for this version of the Win-Fred MPO Transportation Plan is not as detailed as will be provided in future plan updates.

Origin/Destination Data from Winchester/Frederick County Economic Development Commission

The Winchester/Frederick County Economic Development Commission conducted a survey of area businesses to determine regional travel patterns and employment characteristics, including in-commuting and out-commuting. This survey, titled the Northern Shenandoah Valley Regional Workforce Survey[1] provided detail on the percent of Frederick County and City of Winchester residents who live and work within the region as well as out-of-region residents who work within the region (in-commuters).

I-81 Corridor Improvement Study Data

On major roadways within the study area, not all trips will have an end or beginning point within the MPO study area. These vehicle trips are called through trips. Most through trips within the study area occur on the principal arterials, such as I-81, Route 7, US 17, US 50, and US 522. Data collected by VDOT from the I-81 Corridor Improvement Study was used to calibrate these through travel patterns.

1 *Northern Shenandoah Valley Regional Workforce Survey, 2003 Report of Results*, Center for Survey Research, University of Virginia.

Assessment of Existing Traffic Congestion

Existing traffic congestion was evaluated for the daily, morning and evening peak hours. Roadway link congestion was determined using the regional travel demand model. The morning and evening peak hour levels are not included in this plan update. Corridor specific analysis and micro-simulation are better tools for analyzing peak hour operations rather than using the regional travel demand model. Congestion is defined using the criteria in the 2010 Highway Capacity Manual as occurring when traffic operates worse than Level of Service C. Level of Service C is considered typical traffic conditions, and this is what VDOT typically uses to design new roads or roadway improvements. Level of Service C conditions typically occur when traffic volumes reach between 50 to 75 percent of a roadway's capacity (this can vary based on the type of facility, as some facilities, such as two-lane roads, have a lower threshold for congested travel). In addition, congestion can become severe has been defined as when Volume / Capacity Ratios approach or exceed a ratio of 1.00 (essentially the design capacity of the roadway). Volume / capacity ratios exceeding 1.00 can be indicative of overcrowded roads with less than ideal driving behavior (drivers traveling too close to each other, waiting through multiple signal cycles at intersections, widely varying travel speeds, etc.). The long range plan update model analysis includes roadway links only, specific intersections should be modeled through more detailed corridor or preliminary engineering studies.

Roadway Link Congestion

Existing roadway congestion was evaluated by the model to assess base year volume / capacity ratios and traffic conditions. **Figure 4-3 & 4-4** present graphics showing the roadway segments currently operating modeled under different volume / capacity ratios. **Table 4-7** presents a travel demand model summary of key roadway links with a summary of modeled Base Year roadway conditions.

Table 4-7: Base Model Year - Modeled Traffic Volumes & Volume to Capacity Ratios – Selected Segments

Roadway Segment - 2007 WinFred Travel Demand Model	NB/WB Daily Projected Volumes	SB/EB Daily Projected Volumes	Hourly Capacity 2-Way Link	NB/WB Volume / Capacity Ratios	SB/EB Volume / Capacity Ratios
Armistead St from Jubal Early to Breckenridge Ln	3557	3461	1650	0.43	0.42
Fairfax Lane from Cameron Street to N Loudoun St	6295	1827	1000	1.26	0.37
I81 From NB Ramp from I81 at exit 310 to Route 37 To Route 37 east at I81 NB Ramps at Exit 310	12161		1200	1.01	
I81 From Route 37 at I81 exit 310 sb ramps To SB Ramp from Route 37 to I81 at exit 310		12191	1200		1.02

Roadway Segment - 2007 WinFred Travel Demand Model	NB/WB Daily Projected Volumes	SB/EB Daily Projected Volumes	Hourly Capacity 2-Way Link	NB/WB Volume / Capacity Ratios	SB/EB Volume / Capacity Ratios
I81 From VA7 SB Ramp to I81 at Exit 315 To SB ramp from VA7 to I81 exit 315		11357	1100		1.03
Jubal Early From Jubal Early east of Pleasant Valley To Jubal Early east of Pleasant Valley	14105	10901	5400	0.52	0.40
Pleasant Valley From Cork St at Pleasant Valley To Cork St at Pleasant Valley	12034	11322	2200	1.09	1.03
Pleasant Valley from Cork St To Pleasant Valley north of Cork St	12034	11322	2200	1.09	1.03
Pleasant Valley from Woodstock Ln to National Ave	11406	9184	2200	1.04	0.83
Pleasant Valley From Pleasant Valley north of Cork St to Woodstock Ln	11266	10448	2200	1.02	0.95
Pleasant Valley From Pleasant Valley north of Cork St To Pleasant Valley north of Cork St	11605	10820	2200	1.05	0.98
SR1322 Fort Collier Rd from Baker Lane To Fort Collier Rd west of Baker Lane	8200	7760	1100	1.49	1.41
SR1322 Fort Collier Rd from US 11 to SR 783 Brick Kiln Rd	3788	4984	1100	0.69	0.91
SR657 Senseny Rd From Senseny Rd east of Greenwood Rd To Senseny Rd east of Greenwood Rd	3018	3018	2100	0.29	0.29
SR906 Cork St from Cameron St to Loudoun St	4869	4690	1400	0.70	0.67
SR906 Cork St from Pleasant Valley To Cork St east of Pleasant Valley	5250	5256	1650	0.64	0.64
SR915 Paper Mill Rd From Jubal Early to Featherbed Lane	6282	6796	1650	0.76	0.82
SR915 Paper Mill Rd From Papermill Road south of Tevis St To Papermill Road south of Tevis St	6049	6162	1650	0.73	0.75
Stewart From Cork St to Boscawen St	4024	2822	1000	0.80	0.56
US 11 Cameron St From W Piccadilly Street to Fairfax Lane	17282		2000	0.86	
US 11 Gerrard St from Handley Blvd at Loudoun St to Gerrard St just west of Millwood at Gerrard	2551	10780	2000	0.26	1.08
US 11 Gerrard St from Gerrard St just west of Millwood at Gerrard to Millwood Ave	2551	10782	2000	0.26	1.08

Roadway Segment - 2007 WinFred Travel Demand Model	NB/WB Daily Projected Volumes	SB/EB Daily Projected Volumes	Hourly Capacity 2-Way Link	NB/WB Volume / Capacity Ratios	SB/EB Volume / Capacity Ratios
US 11 Martinsburg Pke From N Loudoun Street at North Cameron St To US 11 south of Fort Collier Rd	6602	5269	1650	0.80	0.64
US 11 Martinsburg Pk From US 11 just north of Route 37 N End To US 11 / Route 37 Just West of Welltown Road		13723	1650		0.83
US 11 Valley Ave from Tevis Street To US 11 Valley Ave north of Hope Dr	8682	8674	2200	0.79	0.79
US 11 Valley Ave from US 11 Valley Ave between Hope Dr and SR 914 Middle Rd To Middle Rd	9232	9213	2200	0.84	0.84
US 11 Valley Ave From US 11 Valley Ave north of Bellview Ave To US 11 Valley Ave south of Jefferson St	5171	5197	2200	0.47	0.47
US 11 Valley Ave From US 11 Valley Ave north of Hope Dr To US 11 Valley Ave between Hope Dr and SR 914 Middle Rd	9013	9007	2200	0.82	0.82
US 11 Valley Ave From US 11 Valley Ave south of Tevis Street To US 11 Valley Ave south of Tevis Street	8765	8934	2200	0.80	0.81
US 11 Valley Pk From US 11 south of SR 652 Shawnee Dr To Apple Valley Road	6666	7082	2100	0.63	0.67
US 50 Millwood Ave from Millwood Ave at I81 Exit 313 SB Ramps To Millwood Ave just west of I81 Exit 313 SB Ramps	28411	24026	5400	1.05	0.89
US 50 Millwood Ave From Millwood Ave just west of I81 Exit 313 SB Ramps To Millwood Ave ext at Jubal Early	28411	23997	5400	1.05	0.89
US 50 Millwood Ave From Millwood Ave just west of I81 Exit 313 SB Ramps To Millwood Ave just west of I81 Exit 313 SB Ramps	28411	24026	5400	1.05	0.89
US 50 Millwood Ave From Millwood Ave north of Pleasant Valley To US 50 Millwood Ave south of Kent	10355	8342	2200	0.94	0.76
US 50 Northwestern Pk From nb ramp from I81 at exit 313 to US 50 to US 522	17054	27124	4400	0.78	1.23
US 50 Northwestern Pk from SR 688 To N Hayfield Rd	6461	6476	4800	0.27	0.27
US 50 Northwestern Pk From US 50 Bridge over I81 Exit 313 west end To nb ramp from I81 at exit 313 to US 50	23567	24658	5400	0.87	0.91
US 50 Northwestern Pk from US 522 at US 50 To US 522 at US 50	23739	23804	4400	1.08	1.08
US 50 Northwestern Pk From Wardensville Grade To west end of Round Hill Rd	12767	12811	4800	0.53	0.53

Roadway Segment - 2007 WinFred Travel Demand Model	NB/WB Daily Projected Volumes	SB/EB Daily Projected Volumes	Hourly Capacity 2-Way Link	NB/WB Volume / Capacity Ratios	SB/EB Volume / Capacity Ratios
US 522 N Frederick Pk From US 522 at southbound Route 37 ramps To Apple Pie Ridge Rd at US 522	16402	16151	5400	0.61	0.60
US 522 N Frederick Pk From US 522 south of SR 692 Chapel Hill Rd To US 522 north of Bloomery Pike	4422	4456	6400	0.14	0.14
US 522 N Frederick Pk From US 522 west of Apple Pie Ridge Rd to Apple Pie Ridge Rd	14104	14157	5400	0.52	0.52
VA 7 Berryville Av From VA 7 Berryville Ave east of Fort Collier To VA 7 just west of I81 exit 315 ramps	11964	16451	5400	0.44	0.61
VA 7 National Ave From Just West of Pleasant Valley at National Ave To Pleasant Valley	10267	12479		0.76	0.92
VA 7 National Ave from Pleasant Valley at National Ave To National Ave at VA 7	13798	18231	2700	1.02	1.35
VA 7 National Ave from SR 784 Smithfield Ave To VA 7 National Ave east of SR 784 Smithfield Ave	10033	12250	2700	0.74	0.91
VA 7 National Ave from VA 7 National Ave east of SR 784 Smithfield Ave To Just West of Pleasant Valley at National Ave	10267	12479	2700	0.76	0.92
W Piccadilly from Cameron Street To W Piccadilly between Kent and Cameron St	6328	10508	2600	0.49	0.81

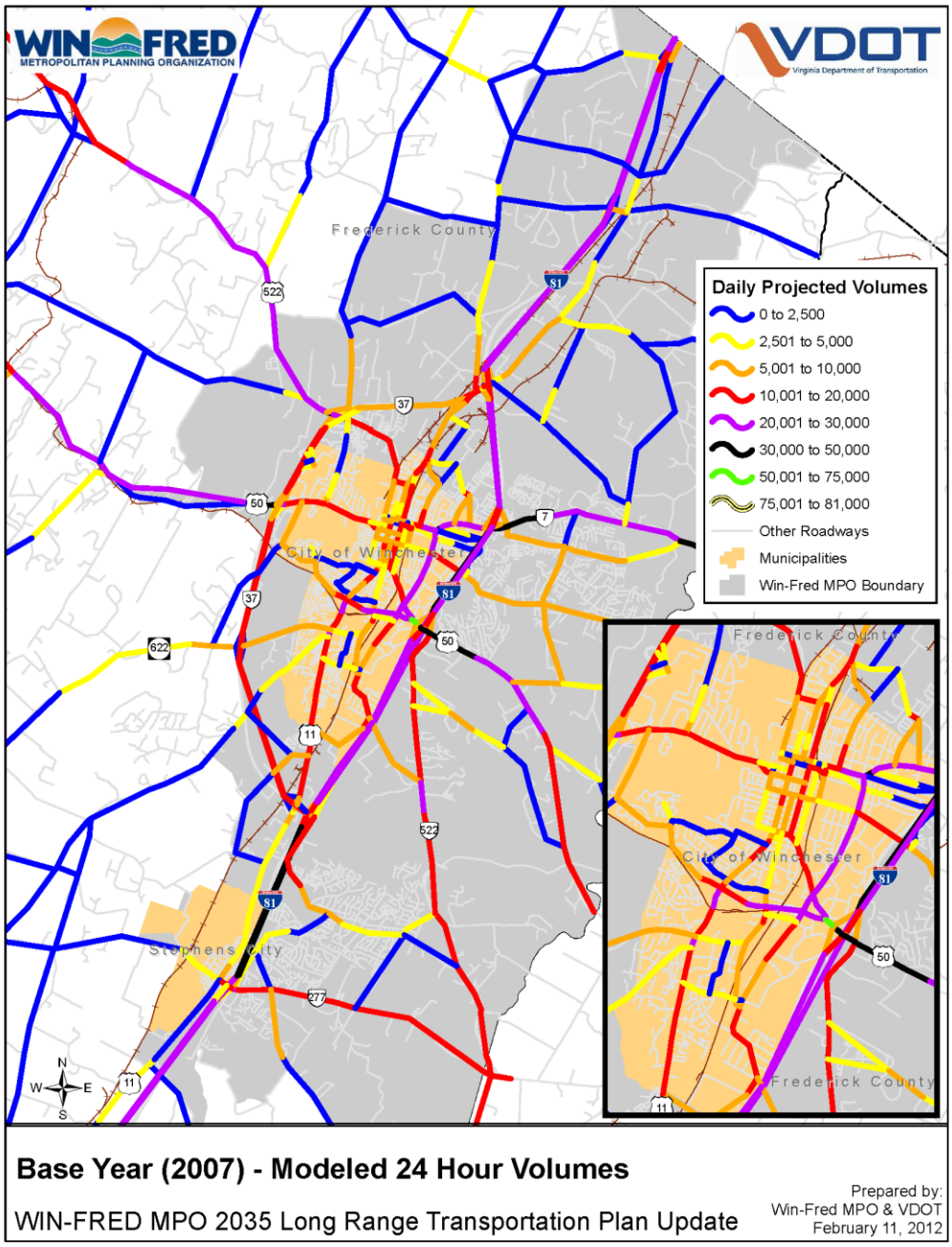


Figure 4-3: Base Year (2007) Modeled 24 Hour Volumes

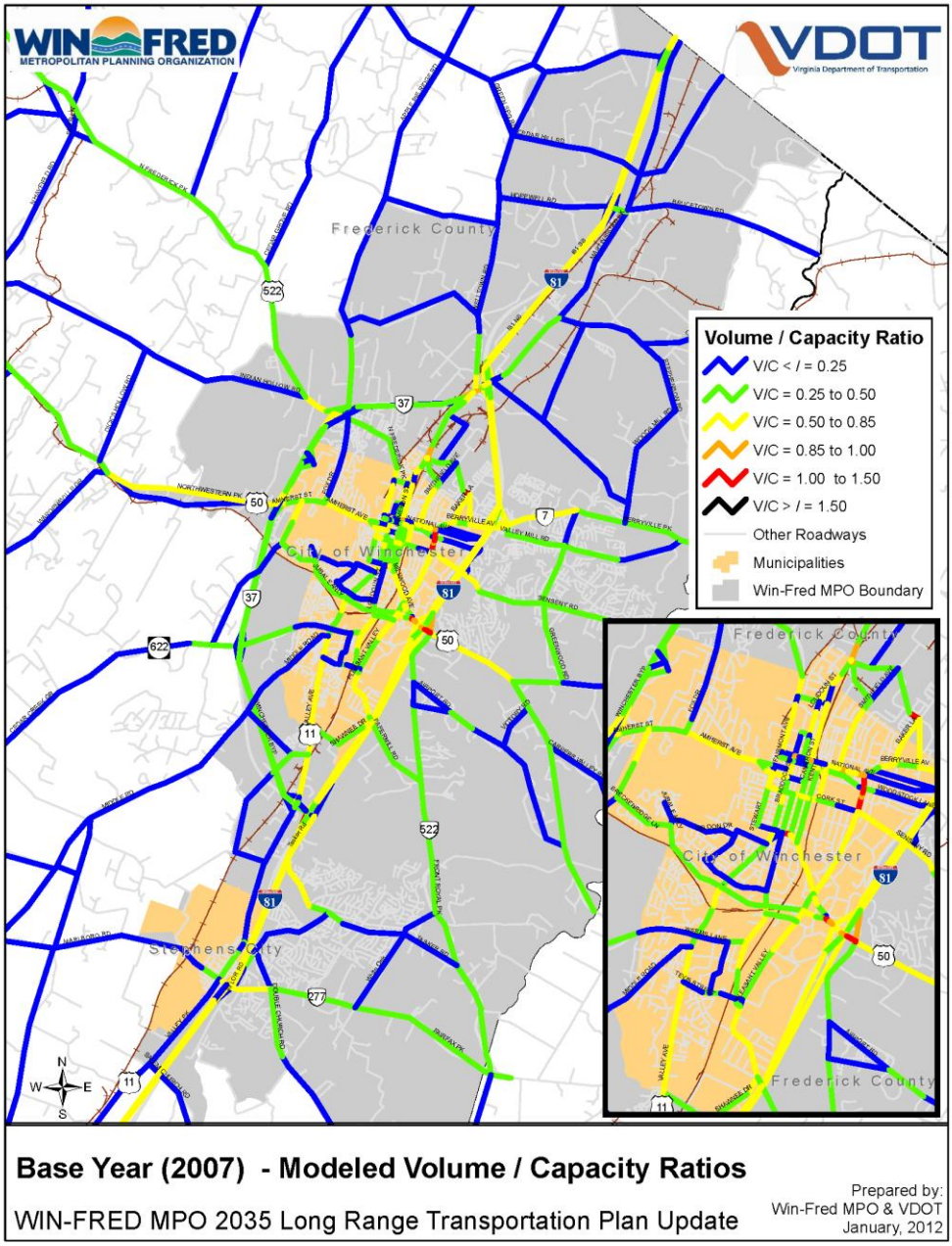


Figure 4-4: Base Year (2007) - Modeled Volume / Capacity Ratios

Public Transit

Winchester Transit

Public transportation in the City of Winchester is primarily provided by Winchester Transit (WinTran), which is operated by the City of Winchester. This bus system operates both fixed route and para-transit (demand-response) service within the City. The fixed routes service residential areas, shopping and commercial developments, medical facilities and the downtown core of the city. The service primarily operates within the City of Winchester; however, some routes extend out into Frederick County. WinTran offers six fixed routes, a trolley route, and Americans with Disabilities Act (ADA) accessible para-transit. The Shenandoah Area Agency on Aging operates a van service (WellTran) that serves seniors and people with disabilities, providing non-emergency transportation for a variety of trip purposes. Medicaid transportation is provided through Logisticare using local private operators. Commuter bus and van service was previously operated by the Valley Connector, but was discontinued in early 2011. The closest intercity bus stop to Winchester is in Hagerstown, Maryland, and the closest Amtrak station to Winchester is in Martinsburg, West Virginia.

The fixed-route service incorporates seven routes that operate between 6:00 AM and 8:00 PM on weekdays and between 9:00 AM and 5:00 PM on Saturdays. There is no service on Sundays. Three 25-passenger buses are used to service the seven routes, with each bus serving two routes. The routes are loop routes that each require about 30 minutes for a round trip leaving from City Hall and returning to City Hall. Service on each route is provided once an hour. Half of the routes have trips leaving City Hall on the hour, the other half of the routes leave City Hall on the half-hour. All three of the buses meet at the City Hall transfer point downtown on the hour and on the half-hour to transfer passengers and start a new run. In addition, there are two bus routes that provide limited service into Frederick County. These buses operate on three-hour headways on weekdays between 6:00 AM and 6:00 PM. On Saturday, two buses run on each of the two new routes, and there is no service on Sunday. A trolley service is available through WinTran operating several days during the week to take passengers to primarily dining and shopping attractions in Winchester.

The seven routes that the city operates are listed below. Figure 4-6 shows the existing Winchester transit routes.

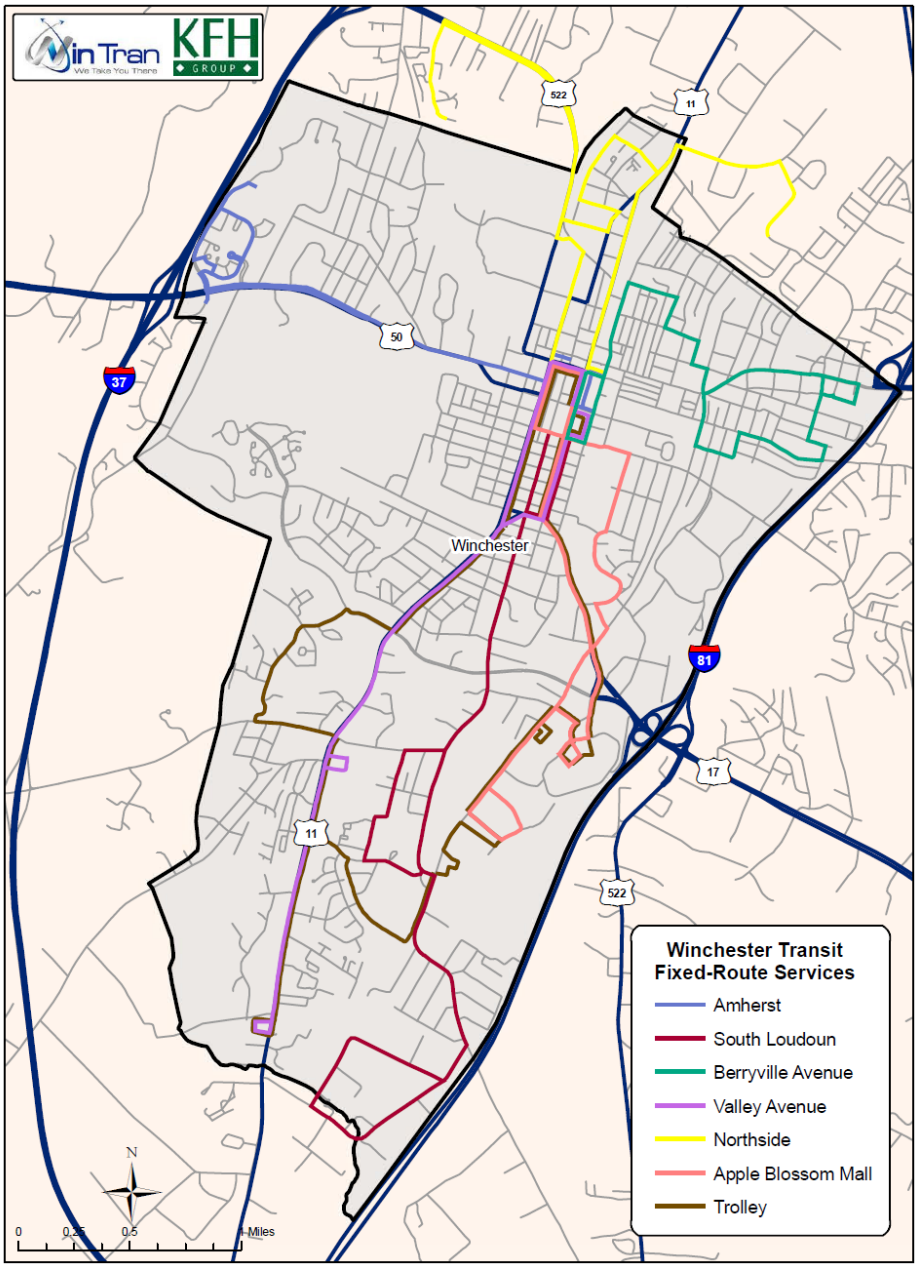


Figure 4-5: Winchester Transit Routes

WinTran Transit Routes:

1. Berryville Avenue
2. Valley Avenue
3. Northside
4. Apple Blossom Mall
5. Amherst Street
6. South Loudoun
7. Trolley (3 days a week)

The one-way base fare for WinTran is $1.00 per trip. Students (under 18), senior citizens, people with disabilities, and Medicare card holders pay a fare of $0.50 per trip. A discount ticket book of 20 tickets is $17.00 There is not a charge to transfer from one route to another during the same trip.

WinTran's demand response para-transit service provides curb-to-curb service to meet the needs of people who are unable to use the fixed routes due to temporary or permanent disabilities. Service is provided to eligible customers within the city and to those destinations that are within ¾ mile of any city fixed-route.

WinTran requires that potential ADA riders complete an application to verify that they are unable to use the fixed route service and the application must be signed by a licensed health-care provider. While the application process can take up to 21 days, WinTran does allow people to use the service while their applications are pending.

Riders are asked to call 24 hours in advance to schedule their trips. The scheduling is handled by an administrative support person, supplemented by the afternoon drivers who make last minute adjustments for calls received after 5:00 p.m. Scheduling is done manually in 15-minute blocks. Two lift-equipped vehicles are used for the service.

The para-transit service provided by the City is an on-call service with trips made by appointment. The service is limited to one bus that operates during the same hours as the fixed-routes. The service generally provides 23 trips per day with a maximum daily service capacity of about 30 trips estimated. The fare of each para-transit trip is 50 cents.

To keep the fixed-route buses on schedule, the city uses an additional bus or the para-transit bus to serve the route if there is a trip that may be missed or significantly delayed. This allows the city to provide a more reliable service and consistent travel times for the system users.

WinTran Passengers can now plan their trips, obtain information on bus connections, get estimated bus arrival times for a particular stop, and view bus information and schedules by entering trip information into Google.

WinTran owns 12 vehicles, including seven body-on-chassis vehicles, two trolleys, two vans, and a staff car. Six of the revenue service vehicles are designated for the fixed routes (three on the road and three spares) and three are designated for the Para-transit program (two on the road and one spare). The spare ratio for the fixed-route vehicles is high at 100%; however the three spare vehicles are all nearing the end of their useful life. All of the revenue service vehicles are ADA accessible.

Table 4-8 outlines total transit ridership by fiscal year from 2005 to 2010. Despite extended service and an easier rider experience WinTran has seen a decline in transit ridership of 13.4% between FY 2005 and FY 2010 with peak ridership during that period in FY 2006.

Table 4-8: Annual Ridership for Winchester Transit

Fiscal Year (FY)	Total Ridership	% Change from Previous FY
2005	143,516	N/A
2006	154,197	7.4%
2007	136,686	-11.4%
2008	144,405	5.6%
2009	119,274	-17.4%
2010	124,310	4.2%
2011	128,876	3.7%

Source: Winchester Transit, 2011

Summary of Transit Services & Development Planning

In 2009 a Transit Services Plan was developed by KFH Group, Inc. for the Win-Fred MPO. In addition, an update to the Transit Development Plan (TDP) for the City of Winchester (WinTran) was completed by the KFH Group, Inc. in August, 2011 and adopted in November of 2011. Major tasks for the Transit Services Plan & TDP included an extensive transit needs analysis with public, agency, and stakeholder outreach, an analysis of existing services, and the development of alternatives to improve public transportation in the region.

The focus of the Transit Analysis was to analyze quantitative land use and population data, along with qualitative data provided by area stakeholders and the public, to develop a solid understanding of the travel needs of the diverse group of current and potential transit riders. The needs analysis incorporated information gathered from City and County comprehensive plans, other relevant plans conducted in the region, the U.S. Census, the Virginia Employment Commission, interviews with local stakeholders, a public survey, and a public open house.

From the quantitative and qualitative data concerning transit needs in Frederick County, the City of Winchester, and the Town of Stephens City, there appears to be a significant level of unmet public transportation need. Each of the primary sources

used demographic data, stakeholders, and the public echoed the same types of needs and these are outlined below:

- Transit services are needed for the newly developed areas of Frederick County adjacent to Winchester along the major travel corridors.
- Transit services are needed between the population centers in the region.
- Intercity bus transportation is needed in the Shenandoah Valley.
- Additional commuter options, including park and ride lots, are needed in the region. Connectivity to regional transit networks is desired.
- Rural Frederick County needs some sort of service, even if it is not provided on a daily basis.
- Local transit services in and around the City of Winchester need to operate later in the evenings and more frequently.
- Information concerning transit services needs to be more available, and services need to be advertised.

The final conceptual plan includes a service plan, financial plan, and implementation plan for the MPO to pursue in future transportation planning endeavors. The transit needs presented above are consistent with concerns outlined throughout the LRTP.

The following goals were included in the 2011 TDP update providing policy guidance as to how WinTran's mission should be accomplished.

1. Offer convenient access to medical facilities, employment areas, shopping centers, schools, and community agencies.
2. Provide access to employment opportunities for City residents.
3. Provide adequate mobility options to enable City residents to "age in place."
4. Promote mobility options that enable City residents to maintain personal independence and be engaged in civic and social life.
5. Help improve the environment by offering transportation alternatives beyond the automobile.
6. Strengthen coordination and explore partnerships between the City of
7. Winchester and Frederick County, major employers, educational facilities,and other private entities to ensure effective service delivery in the community.
8. Manage, maintain, and enhance the existing public transportation system.

Summary of Coordinated Human Service Mobility Plan, 2008

The purpose of the Coordinated Human Service Mobility Plan was to create a comprehensive strategy for the Northern Shenandoah Valley Planning District's transportation. The goal was to have a transportation service delivery to aid the local at-risk target population (seniors, disabled individuals, and low-income individuals). The major outcomes of the Mobility Plan included an assessment of current public and private transportation providers, an assessment of needed improvements to assist the target population, strategies to implement the needed improvements, as well as determining the priorities for improving mobility for the target populations.

Throughout the creation of the Mobility Plan, public input was solicited through mailing lists, workshops, and additional opportunities for public comment on the draft plan. Through mailing lists eight categories of agencies received invitations to participate in the development of the plan: Community Services Boards and Behavioral Health Authorities; Employment Support Organizations; Area Agencies on Aging; Public Transit providers; Disability Services Boards; Centers for Independent Living; Brain Injury Programs; and other appropriate organizations. Three regional workshops took place between April 2007 and June 2008, which the Northern Shenandoah Valley Regional Commission staff attended. In addition to the invitations to participate in the Plan's development and the workshops, the regional stakeholders were given draft versions of the entire Mobility Plan to review and comment on. Public input from these three sources was incorporated into the final Mobility Plan.

Transit Ridership Model Development

To support ongoing and future growth in the current transit system, a transit model was developed to replicate existing conditions and potentially be used for forecasting future transit trips. The transit model was developed using a geographic information system (GIS) platform and incorporated demographic data built into the MPO travel demand model to calibrate the existing transit ridership. This model can be used to both evaluate existing and future service changes in the future.

Northern Shenandoah Valley Public Mobility Program

The Northern Shenandoah Valley Public Mobility Program is an ongoing effort to create a coordinated human services transportation system for the Northern Shenandoah Valley region of Virginia using advanced intelligent transportation systems technology. A total of 21 agencies are involved in this program, including Frederick County and the City of Winchester. Coordination services include:

- Networked computer-aided dispatching,
- Ride-sharing for the clients of the participating human service agencies,
- Van-sharing between the agencies for on-going or event specific transportation, and
- Flex-routing and demand responsive transportation to maximize existing human service transportation routes.

Northern Shenandoah Valley RideSmart Program

Ridesharing is currently facilitated by Northern Shenandoah Valley RideSmart program. RideSmart is a service provided by the Northern Shenandoah Valley Regional Commission that provides commuter information and rideshare assistance

for residents and businesses located in the City of Winchester and Clarke, Frederick, Page, Shenandoah and Warren Counties. RideSmart provides on-line commuting and ridesharing information by calling (540) 635-4146 or on their website at www.ridesmartva.org.

Park and Ride Facilities

There are currently no park and ride facilities inside the designated Win-Fred MPO boundary. However, there are a number of existing park and ride lots located near the MPO at the following locations:

Jurisdiction	Location	Spaces
Clarke County		
Waterloo	VA 340 at US 50	160
Fauquier County		
Markham	Route 688 at I-66	15
Marshall	Frost Road	75
Remington	VA 651 at US 15/ 29/17	16
Warrenton	US 29/211 at VA 605	212
Page County		
Luray	US 340 at US 211 Bypass	103
Shenandoah	Route 602 in Shenandoah	30
Shenandoah County		
Strasburg	US 11 near I-81	30
Warren County		
Front Royal	I-66 at US 340 / 522	262
Linden	I-66 at VA 647	130

In addition to maintaining and managing the existing regional park and ride facilities, the 2035 LRTP & Vision plan includes the following locations for consideration of development of additional park and ride facilities:

- US 522 at Tasker Road
- Northern & Western parts of Frederick County
- Virginia Route 7 Corridor – City of Winchester to Clarke County

Public Transportation Priorities in 2035 LRTP & Vision Plan

The following local and regional transit projects have been included as priorities in the 2035 Long Range Transportation Plan Update. Expansion of WinTran Transit Service into Frederick County is not anticipated within the next six years.

Local Transit LRTP & Vision Plan Projects

- Extend Transit Service for the Route 7/Berryville Avenue Route
- Extend Transit Service for the Valley Avenue Route to Cross Creek Villa
- Extend Transit Service for the Amherst Route to Wal-Mart

- Extend Transit Service for the Apple Blossom Mall Route to Millwood Ave/US 522 South Corridor
- Extend Transit Service for the Northside Route to Rutherford Crossing
- Link the Apple Blossom Route with the Amherst Route
- Reconfigure the Winchester Trolley Route
- Extension of Service Hours into Late Evening and Sunday Service
- Increase Transit Frequency from Hourly Service to 30-Minute Service
- Improve Passenger Amenities
- Construction of Winchester Transit Department Administrative Building
- Replacement of Two Fixed Route Buses for WinTran
- Bus Stop Announcement System for Transit Buses
- Expand the Valley Connector for Service to the D.C. Area

Human Services Transportation LRTP & Vision Plan Projects

- Establish Countywide Demand-Response Public Transportation

Regional Transit LRTP & Vision Plan Projects

- Provide Corridor Service on US 11 to Lord Fairfax Community College
- Create Regional Corridor Service throughout the I-81/US 11 Corridor
- Future Passenger Rail Service along I-81 Corridor

Travel Demand Management LRTP & Vision Plan Projects

- Support telework opportunities for region employees and residents
- Promote additional opportunities for flexible work hour schedules

Bicycle and Pedestrian Travel

Bicycle and Pedestrian Mobility Plan

Pedestrian and bicycle travel is often overlooked in a regional transportation plan, yet a region's network of sidewalks, crosswalks and trails are extremely important in improving local mobility, providing access to transit services, shopping, and leisure activities. In 2007, a Bicycle and Pedestrian Mobility Plan was completed by Toole Design Group, LLC and adopted for the Win-Fred MPO the plan addressed planning for and needs assessment for pedestrian and bicycle facilities, policies and programs in the region. The pedestrian needs assessment including evaluation of short, medium and long-term sidewalk improvements, ADA improvements, roadway crossing improvements as well as shared use paths.

Primary Goals of the Bicycle and Pedestrian Mobility Plan included:

GOAL 1, CONNECTIVITY: Develop a regional walkway, bikeway, and greenway network among residential neighborhoods, workplaces, shopping centers, historic

sites and districts, schools, libraries, recreation centers, parks, battlefield sites, and other destinations, including linkages to neighboring jurisdictions.

GOAL 2, PRESERVATION OF COMMUNITY CHARACTER AND THE ENVIRONMENT: Preserve the unique character of the Winchester-Frederick region and protect the environment by encouraging pedestrian and bicycle travel and designating greenway and open space corridors.

GOAL 3, ECONOMIC DEVELOPMENT: Improve pedestrian and bicycle accommodations to support local businesses and to provide more opportunities for recreation-based and heritage tourism.

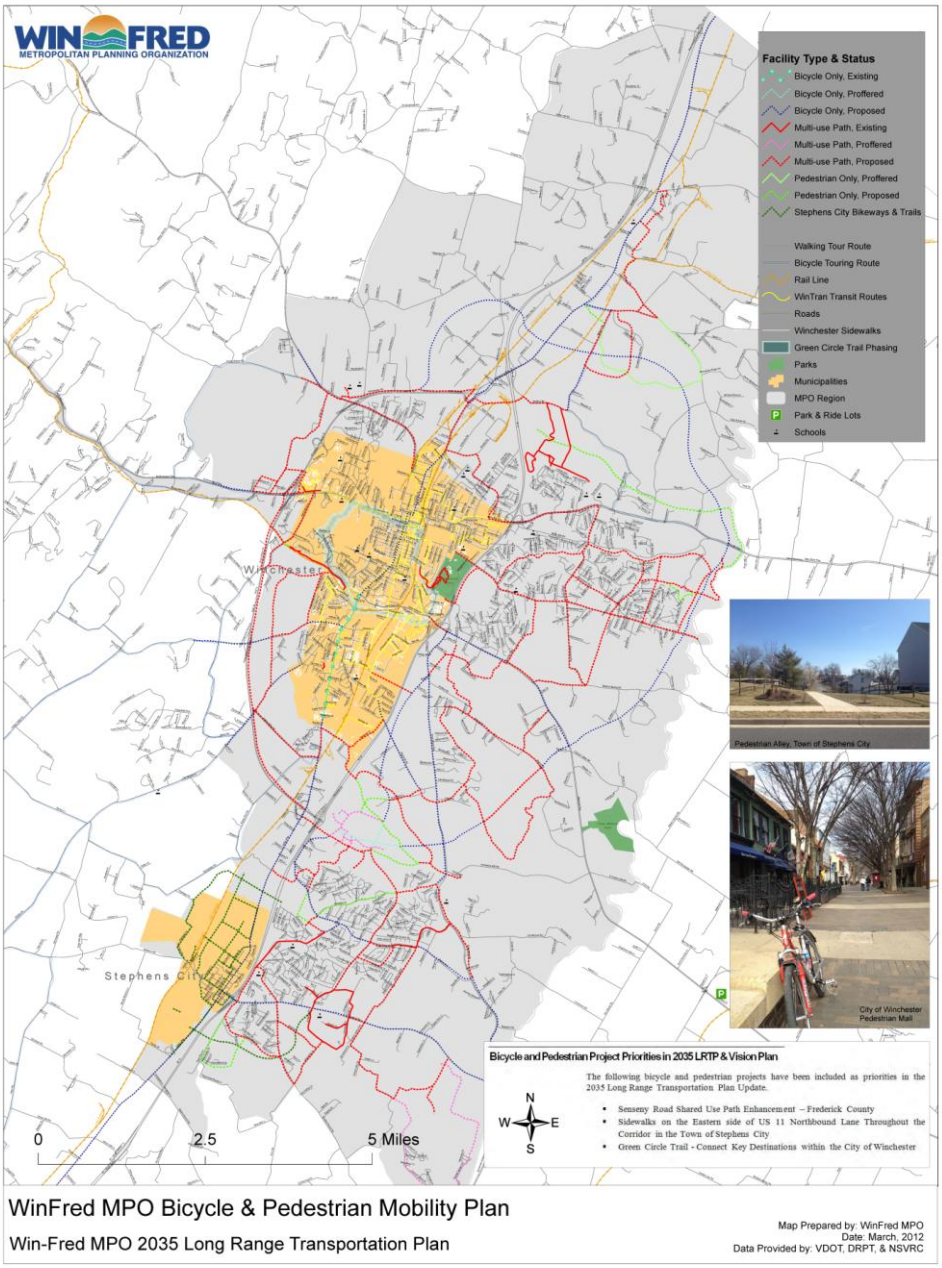
GOAL 4, HEALTH: Provide opportunities and encouragement for the region' residents to walk, bicycle, skate, run, and gain the health benefits of incorporating physical activity into their daily lives.

GOAL 5, SAFETY: Minimize the number of pedestrian and bicycle crashes and injuries while increasing the amount of pedestrian and bicycle activity in the region through improved facilities and education targeted at multiple users (motorists, bicyclists, and pedestrians).

Bicycle and Pedestrian Project Priorities in 2035 LRTP & Vision Plan

The following bicycle and pedestrian projects have been included as priorities in the 2035 Long Range Transportation Plan Update.

- Senseny Road Shared Use Path Enhancement – Frederick County
- Sidewalks on the Eastern side of US 11 Northbound Lane Throughout the Corridor in the Town of Stephens City
- Green Circle Trail - Connect Key Destinations within the City of Winchester


WINFRED
METROPOLITAN PLANNING ORGANIZATION
Facility Type & Status
Bicycle Only, Existing
Bicycle Only, Proffered
Bicycle Only, Proposed
Multi-use Path, Existing
Multi-use Path, Proffered
Multi-use Path, Proposed
Pedestrian Only, Proffered
Pedestrian Only, Proposed
Stephens City Bikeways & Trails
Walking Tour Route
Bicycle Touring Route
Rail Line
WinTran Transit Routes
Roads
Winchester Sidewalks
Green Circle Trail Phasing
Parks
Municipalities
MPO Region
Park & Ride Lots
Schools
Winchester
Stephens City
Pedestrian Alley, Town of Stephens City
City of Winchester Pedestrian Mall
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N
W
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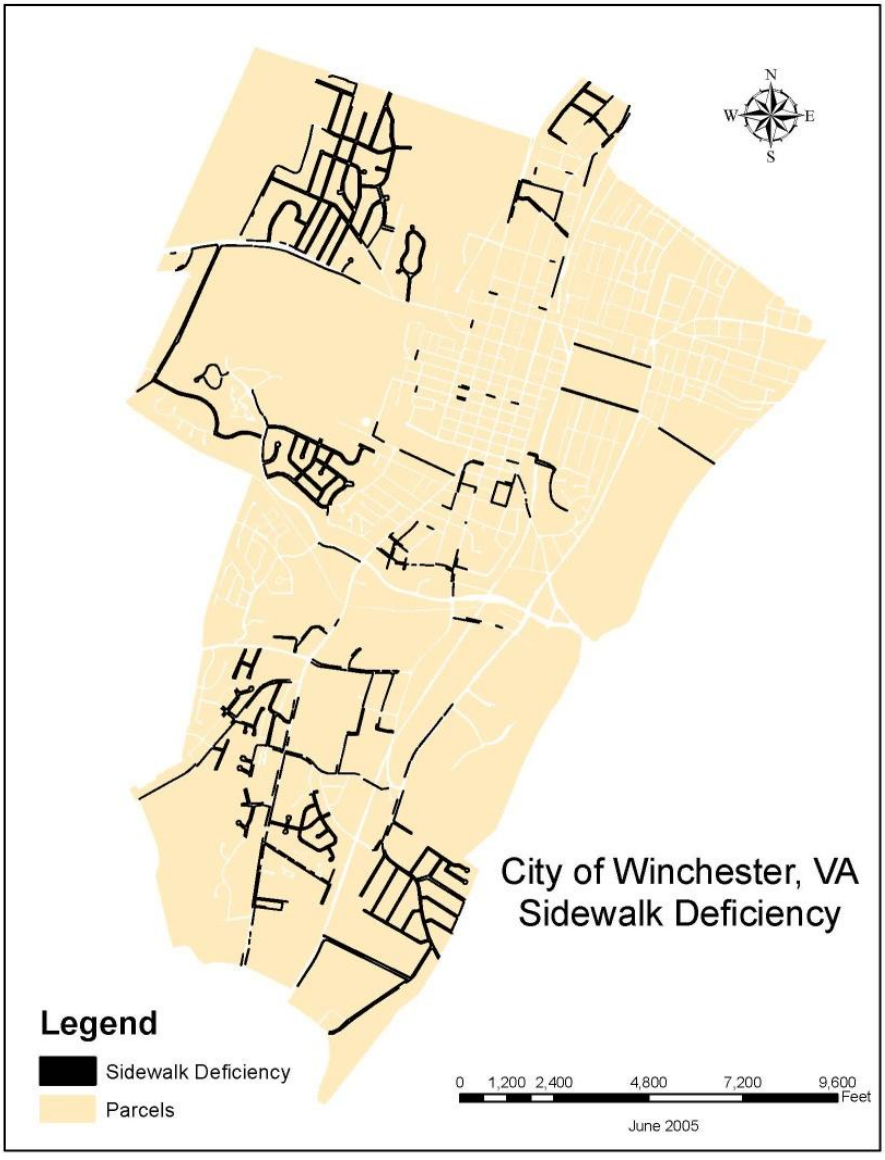
2.5
5 Miles
WinFred MPO Bicycle & Pedestrian Mobility Plan
Win-Fred MPO 2035 Long Range Transportation Plan
Map Prepared by: WinFred MPO
Date: March, 2012
Data Provided by: VDOT, DRPT, & NSVRC

Figure 4-6: 2007 Win-Fred MPO Bicycle & Pedestrian Plan Map

Pedestrian Facilities

Within the City of Winchester, the City's network of sidewalks, though extensive, is incomplete, and the locations with missing sidewalks are shown in **Figure 4-7**.



Local & Regional B

Figure 4-7: Existing City of Winchester Sidewalk Deficiencies

The NSVRC and the Shenandoah Valley Battlefields Foundation sponsored the development of a regional bicycle and pedestrian planning guide for the Northern Shenandoah Valley region, including the City of Winchester, the town of Stephens City and Frederick County. This plan focused on ways to improve local and regional pedestrian and bicycle access and linkages for recreation and civil war heritage tourism. Completed in October 2004, this document, titled "Walking and Wheeling the Shenandoah Valley" provided discussion of study goals, inventory of existing facilities, discussion of projects underway, design guidelines, and implementation issues. Within the Win-Fred MPO region, this plan included proposals of the Winchester Green Circle Trail, the Redbud Run Greenway, and Old Town Winchester Improvements. **Figure 4-9** shows the existing Bike Route Analysis prepared in the NSVRC study for the Winchester/Frederick County area.

The guide also discussed an ongoing planning effort called the "Winchester Green Circle." As shown in **Figure 4-10**, the Winchester Green Circle is envisioned as a network of streets, sidewalks, and trails making a loop within the City of Winchester and providing access to cultural, education, recreational and commercial sites around the City in a linear park setting.

The Town of Stephens City has a detailed bikeways and trails plan in their current comprehensive plan (See **Figure 4-8**), and continued expansion of this network is planned as new roadways are constructed. As discussed in the previous section on pedestrians, the Town has identified many missing sections of sidewalks that are identified as an existing deficiency to the Town's pedestrian network.

Town of Stephens City - North/South Sidewalks

1. East side of Main Street between Steele Court to Stephens Court,
2. West side of Main Street from a point just south of School Street to the existing southernmost town corporate limit, and
3. All sidewalks on Locust Street except between Filbert Street and Short Street.

Town of Stephens City - East/West Sidewalks

1. North side of Fairfax Street from Mulberry Street to I-81, and
2. North side of Locust Street from Main Street to Mulberry Street.

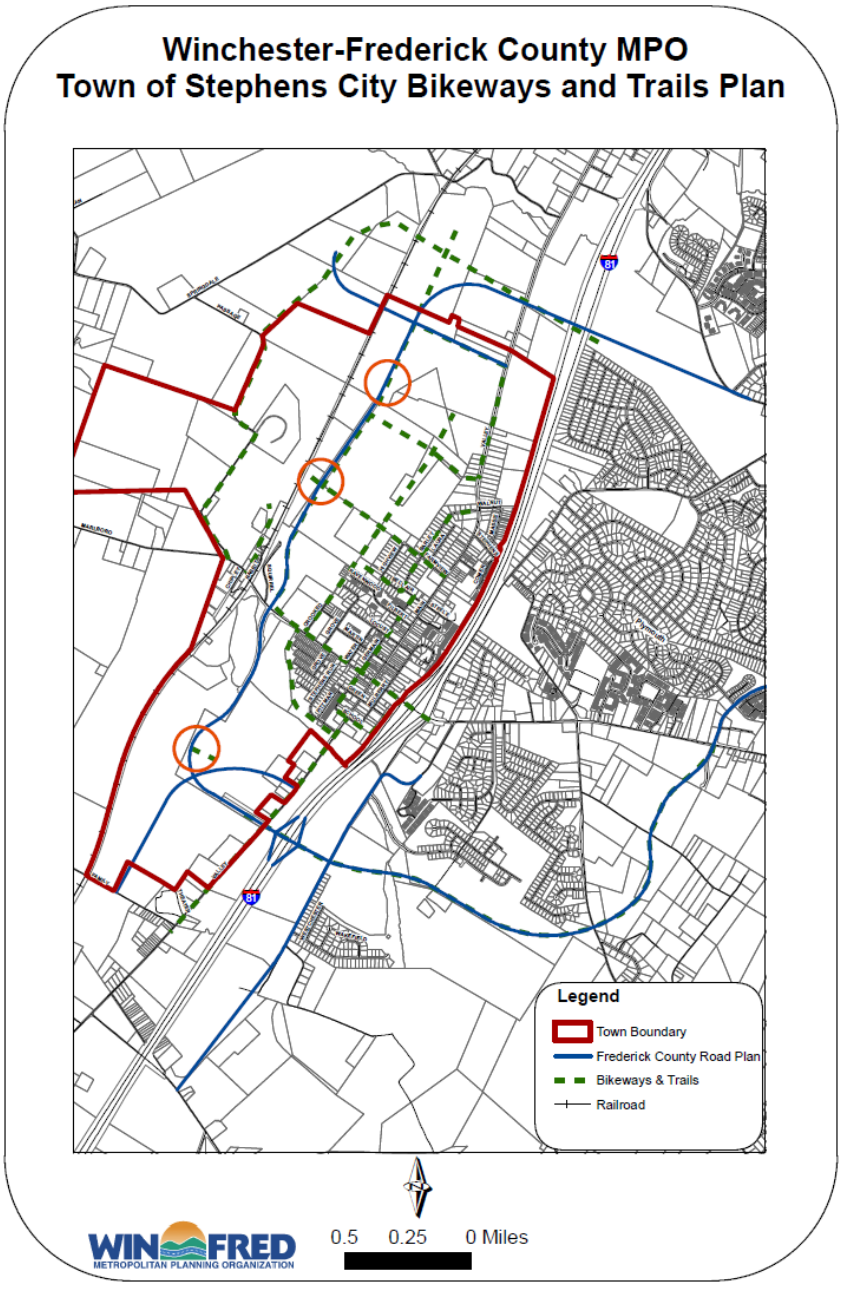


Figure 4-8: Town of Stephens City Bikeways & Trails Plan

The Win-Fred MPO completed an MPO bicycle and pedestrian plan in 2007 that built on the recommendations of the NSVRC regional bike plan and help to provide a MPO a framework for the continued development and integration of bicycle and pedestrian accommodations on MPO-region roadways.

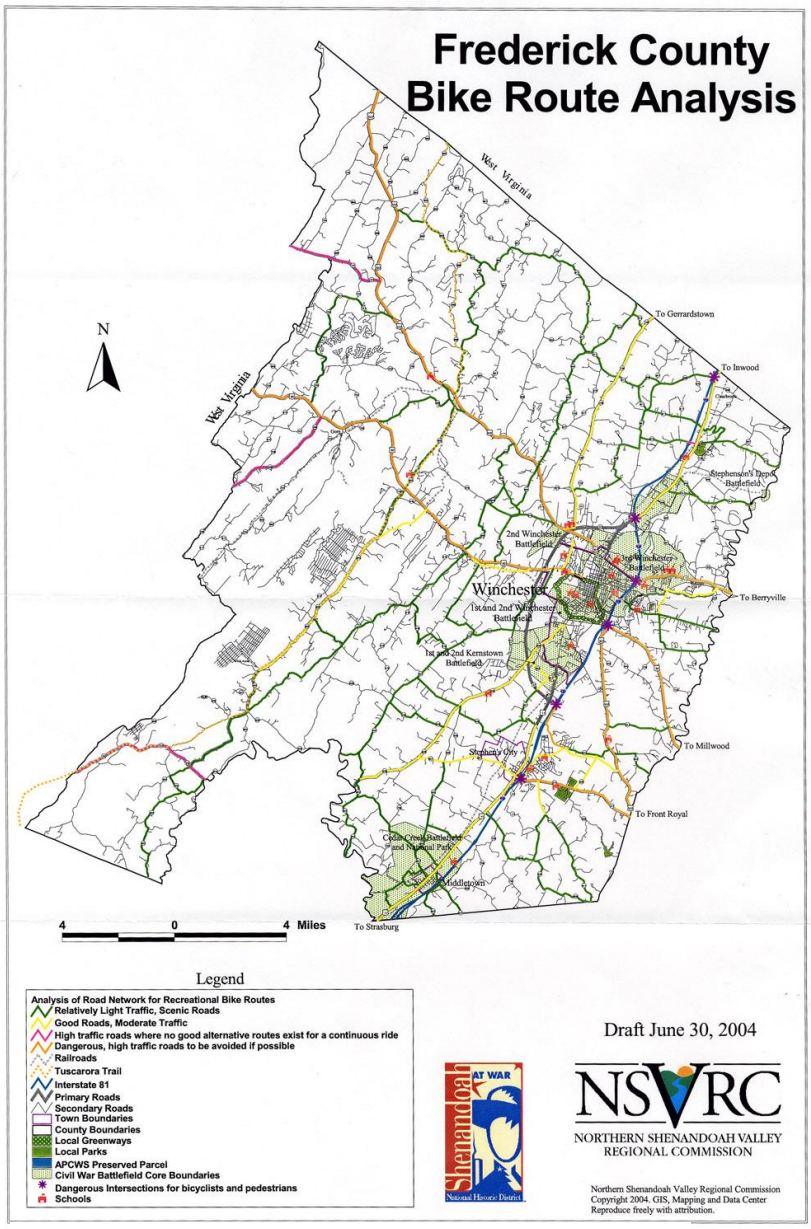


Figure 4-9: NSVRC Regional Bike Route Analysis

Figure 4-10: Green Circle Trail - City of Winchester, VA

Aviation

The Win-Fred MPO is served by the Winchester Regional Airport, which is located in Frederick County on Airport Road (west of the City of Winchester on US 17/50). This regional airport is a general aviation airport and is not certified to handle commercial aircraft. The airport currently has two runways, each with a runway length of 5500 feet. Runway 32 is a precision instrument runway, while runway 14 is a non-precision instrument runway. As of 2011, there are currently 133 aircraft based at this airport, and the airport averages 20-50 flights per day depending on weather conditions and 7,300-18,250 flights per year. In 2010, there were 44,924 general aviation operations at the airport. The runway was resurfaced and there were lighting improvements in 2011.

Specific Winchester Regional Airport projects included in the 2035 Long Range Transportation Plan include:

- Rehabilitation of Runway 14-32 and Runway Lighting Upgrade
- Relocation of Taxiway A
- Purchase of Bufflick Road Land Parcels (50, 51, 52, 54, 64, 65 & 67)

Freight & Goods Movement

Goods movement needs are served by both rail freight and truck freight within the MPO. The majority of goods movement needs are satisfied using truck freight, and the proximity of I-81 to many of the major businesses within the MPO boundaries provides the primary transportation route. Major employment centers that generate significant truck volumes include the area's major business sites, as detailed in **Table 4-9** below. Within the region, a number of the major businesses that generate significant truck freight include the Home Depot and Kohl's (Airport Business Center) distribution facilities, Rubbermaid, Kraft (Fort Collier), Trex and HP Hood.

Table 4-9: Major Business Sites in the Win-Fred MPO Region

Major Business Site	Approx. Number of Businesses	Approx. Total Number of Employees
Stonewall Industrial Park	30	1,000 +
Fort Collier Industrial Park	25	1,000 +
Winchester Industrial Park	8	1,000 +
Airport Business Center	8	500
Airport Business Park	6	500
Westview Corporate Center	6	100
Coca-Cola Industrial Park	2	100
Eastgate Industrial Park	5	75

Table 4-10: Highest Truck Volume Roadways by Percentage

Description	Phys. Juris. [a]	AADT [b]	Percent Trucks & Busses [c]	AADT - Link Pair
I-81 NB from 34-672 Hopewell Rd to 34-669 Rest Church Rd	FC	23000	26%	46000
I-81 NB from US 11 Martinsburg Pike to 34-672 Hopewell Rd	FC	23000	26%	46000
I-81 NB from 34-669 Rest Church Rd to West Virginia State Line	FC	22000	26%	44000
I-81 NB from Shenandoah County Line to I-66, Frederick County Line	FC	26000	25%	51000
I-81 NB from Shenandoah County Maintenance Break to Warren County Line	FC	26000	25%	51000
I-81 SB from 34-672 Hopewell Rd to 34-669 Rest Church Rd	FC	23000	25%	46000
I-81 SB from US 11 Martinsburg Pike to 34-672 Hopewell Rd	FC	23000	25%	46000
I-81 SB from 34-669 Rest Church Rd to West Virginia State Line	FC	21000	25%	44000
I-81 SB Exit 320R Winchester Welcome Center from I-81 South to Welcome Center to Enter Welcome Center Parking Lot	FC	1300	25%	
I-81 SB from Warren County Line to I-66	FC	25000	22%	51000
I-81 SB from Shenandoah County Line to Frederick County Line	FC	25000	22%	51000
I-81 SB from Shenandoah County Maintenance Break to Warren County Line	FC	25000	22%	51000

The region is also served by rail freight transportation. The highest percentage truck volume roadway links in the MPO region are noted in Table 4-10. Locally, the region is served by the Winchester & Western railroad, providing local rail freight service primarily within the City of Winchester environs. CSX railroad also provides rail freight service through the Winchester area. Regionally, the MPO is located close to the Front Royal Inland Port, an intermodal transfer terminal on US 522 approximately five miles to the southeast of the MPO boundaries. The port, owned and operated by the Virginia Port Authority, allows for the transfer of containerized cargo between the Port of Hampton Roads and northwestern Virginia, with convenient access to I-81 and I-66. This port is served by Norfolk Southern rail tracks which connect directly south in the Town of Front Royal at Riverton Junction with rail service to Manassas and other destinations in Northern Virginia and points south.

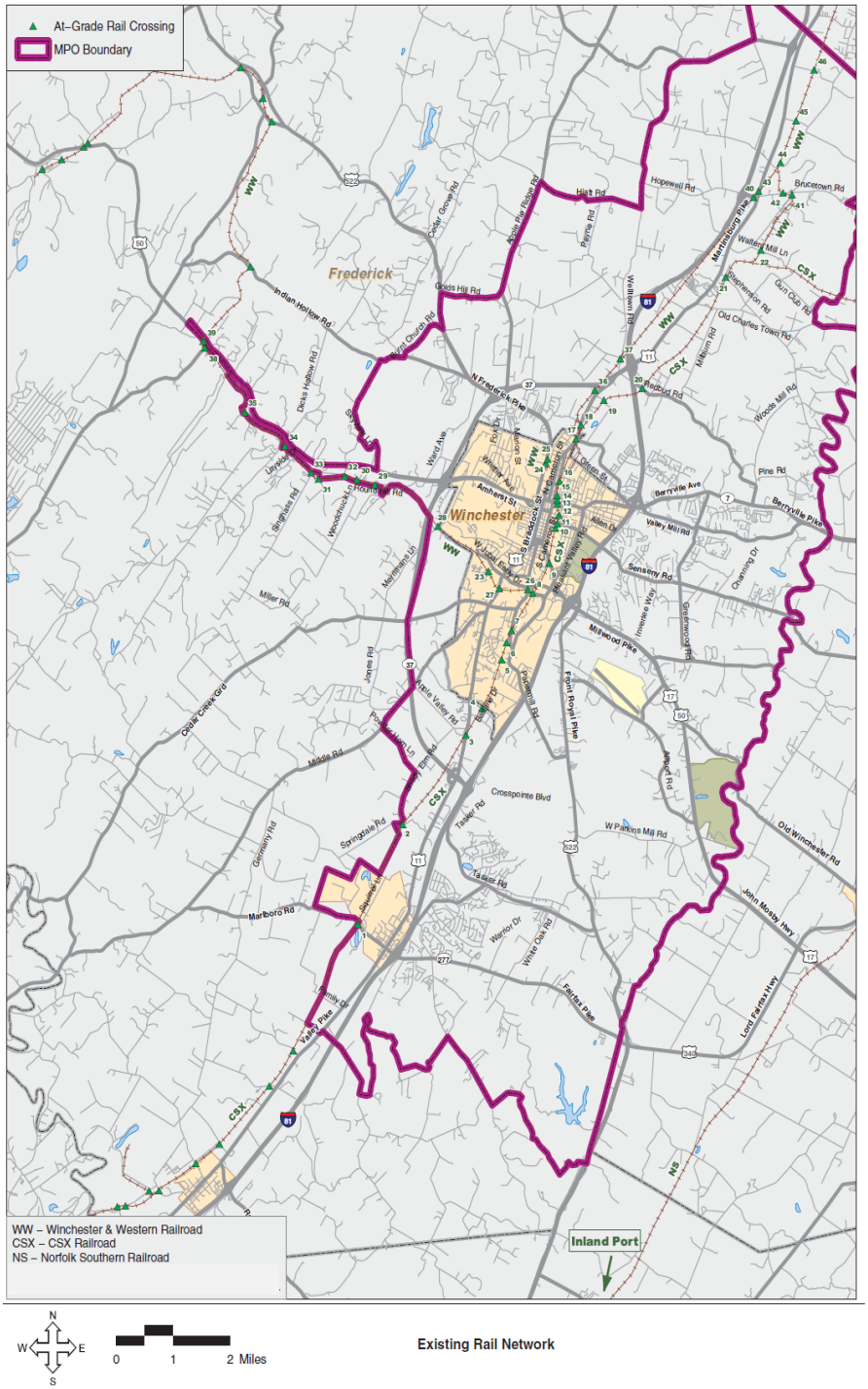


Figure 4-11: Existing Rail Network in Win-Fred MPO area

Within the MPO, most freight rail service occurs using low-volume, low-speed railroad tracks with at-grade rail crossings located at many locations within Frederick County, the Town of Stephens City, and the City of Winchester. The existing rail network is shown in **Figure 4-11.**

Table 4-11 provides a summary of the 46 at-grade rail crossings located within the MPO region. This table provides information on the traffic control provided at each crossing, the operating railroad, the number of tracks, the number of daily trains, posted train speed, crash history over the past five years, and the daily traffic volume on the roadway crossing the tracks. During the past five years, two crashes were reported and no fatalities.

Table 4-11: Major At-grade Rail Crossings in the Win-Fred MPO Region

Crossing ID	Crossing Street	Rail Road	Flashing Lights	Bell	Gates	Number of Tracks	Daily Number of Trains	Track Speed Limit (mph)	Train/ Vehicle Crashes	Train/ Vehicle Fatalities	Cross Street Daily Traffic
1	Fairfax	CSX	✓	No	No	1	2	10	1	0	2,421
2	Springdale	CSX	No	No	No	1	2	10	0	0	441
3	Valley	CSX	✓	✓	✓	1	2	10	0	0	15,854
4	Shawnee	CSX	✓	✓	✓	1	2	10	0	0	4,679
5	Cedarmeade	CSX	✓	✓	No	1	2	25	0	0	997
6	Tevis	CSX	✓	✓	✓	1	2	10	0	0	7,685
7	Papermill	CSX	✓	✓	✓	1	2	10	0	0	5,810
8	Featherbed	CSX	✓	✓	✓	1	2	10	0	0	9,303
9	Millwood	CSX	Cantilever		✓	1	6	10	0	0	16,988
10	East	CSX				1	6	10	0	0	100
11	Cork	CSX	✓			1	6	10	0	0	10,544
12	Boscawen	CSX	No			1	6	10	0	0	5,500
13	Piccadilly	CSX	✓			1	6	10	0	0	10,610
14	Fairfax	CSX	No			1	6	10	1	0	9,555
15	Baker	CSX	No			2	6	10	0	0	2,000
16	Wyck	CSX	No			3	6	10	0	0	200
17	Brick	CSX	Cantilever		✓	1	6	10	0	0	13,786
18	Martinsburg	CSX	Yes			1	6	10	0	0	11,343
19	Gives	CSX	✓	✓	✓	1	2	10	0	0	4,387
20	Redbud	CSX				1	2	10	0	0	762
21	Stephenson	CSX	✓			1	2	25	0	0	1,092
22	Walters	CSX				1	1	10	0	0	132
23	Harvest	WW				1	4	5	0	0	500
24	Fairmont	WW	✓			1	1	10	0	0	12,088
25	Commercial	WW				2	1	10	0	0	4,348
26	S Loudoun	WW	Cantilever		✓	1	4	10	0	0	15,958
27	Valley	WW				1	4	10	0	0	17,332
28	Merriman's	WW				1	2	10	0	0	1,604
29	Round	WW	✓	✓		1	2	10	0	0	1,136
30	Pingley	WW				1	2	10	0	0	162
31	Gather	WW				1	2	10	0	0	53
32	Round	WW	✓	✓		1	2	10	0	0	1,136

Data provided by the Virginia Department of Transportation, Transportation Mobility Management Division, Highway/Rail Grade Crossing Inventory Listing. May 2005.

Major At-Grade Rail Crossings in the Win-Fred MPO Region (Continued)

Crossing ID	Crossing Street	Rail Road	Flashing Lights	Bell	Gates	Number of Tracks	Daily Number of Trains	Track Speed Limit (mph)	Train/ Vehicle Crashes	Train/ Vehicle Fatalities	Cross Street Daily Traffic
33	Singhass	WW				1	2	10	0	0	797
34	Wardensville	WW	✓			1	2	10	0	0	1,067
35	Mcfarlands	WW				1	2	10	0	0	319
36	Gives	WW	✓			1	2	10	0	0	2,260
37	Welltown	WW	✓	✓	✓	2	4	10	0	0	3,919
38	Back	WW	✓	✓		1	2	10	0	0	3,700
39	Northwestern	WW			✓	1	2	5	0	0	11,313
40	Hopewell	WW	✓	✓	✓	1	2	10	0	0	3,622
41	Quarry	WW				1	2	10	0	0	1,063
42	Brucetown	WW				1	2	10	0	0	2,860
43	Martinsburg	WW	✓	✓	✓	1	2	10	0	0	6,291
44	Woodside	WW	✓			1	4	10	0	0	41
45	Branson	WW				1	2	10	0	0	263
46	Woodbine	WW				1	2	20	0	0	166

Data provided by the Virginia Department of Transportation, Transportation Mobility Management Division, Highway/Rail Grade Crossing Inventory Listing. May 2005.

Chapter 5 2035 Network Analysis

Long Range Transportation Plans are required to provide analysis of future year roadway networks for at least 20 years into the future. This update takes the planning horizon from 2030 to 2035. This chapter discusses the establishment of a future year "No-Build" condition from which to evaluate the following:

- Future land use projections
- Evaluation of a 2035 No-Build transportation network.
- Evaluation of a 2035 CLRP Build Transportation Network
- Identification of committed transportation investments
- Evaluation of 2035 Build Network with committed Jubal Early Drive/Meadow Branch Extensions

No-Build Condition (2035)

Under the terms of the National Environmental Policy Act (NEPA), all actions must be compared against the base case of doing nothing. For transportation studies, this base case of doing nothing is called the "No Build" or "No Action" alternative. The impacts, benefits, and costs of all alternatives associated with each alternative are compared to the "No Build" alternative. The "No Build" alternative, however, does not imply that existing facilities will not be maintained as needed. Maintenance of existing facilities will continue no matter what alternative is selected.

Likewise, the "No Build" or "No Action" alternative also does not assume that planned projects for which funds have been committed for construction would be abandoned. Rather, the "No Build" or "No Action" alternative assumes that committed projects would be constructed; however, no new projects, would be implemented. In this way, various transportation improvements under consideration will have reasonable and realistic conditions to which alternative projected effects can be compared.

The "No-Build" alternative is defined as the funded portions of the MPO's Long Range Plan. Current funding commitments have been allocated through the VDOT Six-Year Improvement Plan process and through the Virginia Department of Rail and Public Transportation (DRPT). The No-build and all future year network scenarios include all projects **currently funded in the current VDOT six-year improvement program.**

Future Demographic Forecast

The projection of future traffic volumes was performed using the Win-Fred MPO travel demand model. This model, as discussed in **Chapter 4**, was calibrated to reasonably replicate existing traffic volume and operating conditions. The model also entailed the development of population, household and employment projections to the future plan horizon year (2035).

Population Projections

Population growth is based on 2030 forecasts prepared by the Virginia Department of Employment (VEC) for both the City of Winchester and Frederick County. Projections on changes in average household size were provided by the Northern Shenandoah Valley Regional Commission. The calculated change in people in a household was used to calculate a control total for a future number of households. This information was reviewed in considerable detail by planning staff from the City of Winchester, the Town of Stephens City, and Frederick County and by the Win-Fred Technical Advisory Committee. **Table 5-1** shows the growth in population and households within both the MPO region and the study area in general. **Table 5-2** shows the projected average household size.

Table 5-1: Projected Population/Household Growth in Winchester/Frederick County

	Population			Households		
Area	**2003**	**2030**	**% Change**	**2003**	**2030**	**% Change**
City of Winchester	25,096	28,891	15%	10,647	12,779	20%
Frederick County – MPO Portion	42,294	82,246	94%	15,805	32,704	107%
Total MPO	**67,390**	**111,137**	**65%**	**26,452**	**45,483**	**72%**
Frederick County – Non-MPO Portion	21,906	29,523	35%	8,150	11,755	44%
Winchester and Frederick County Totals	**89,296**	**140,660**	**58%**	**34,602**	**57,238**	**65%**

Note: 2030 Population estimates obtained from the Virginia Employment Commission and adjusted based on local input. Households estimated from average household sized projections from the Northern Shenandoah Valley Regional Commission.

Table 5-2: 2010 Actual and 2030 Projected Household Size

Area	2010 Household Size*	2030 Household Size
City of Winchester	2.36	2.26
Frederick County – MPO Portion	2.68	2.54
Total MPO	**2.55**	**2.44**
Frederick County – Non-MPO Portion	2.69	2.51
Winchester and Frederick County Totals	**2.58**	**2.46**

* Household size shown as number of persons per household as determined by the Win-Fred EDC.

2035 Employment

Employment growth was forecasted primarily using forecasts developed by the VEC and the Winchester-Frederick County Economic Development Commission (Win-Fred EDC). This information was reviewed in considerable detail by planning staff from the City of Winchester, the Town of Stephens City, and Frederick County and by the Win-Fred Technical Advisory Committee. **Table 5-3** shows the projected 2030 growth in employment within the MPO region/study area.

Table 5-3: 2030 Total Employment in Winchester/Frederick County

Area	2003 Employment	2010 Employment*	2030 Employment*
City of Winchester	26,600	23,499	20,760
Frederick County-MPO Portion	17,247	18,820	20,536
Total MPO	**43,847**	**42,319**	40,844
Frederick County-Non-MPO Portion	3,408	**4,679**	6,424
Winchester and Frederick County Total	**47,255**	**46,998**	**88,564**

Note: 2010 estimate of employment was provided primarily by the Virginia Employment Commission, using the BLS Quarterly Census of Employment and Wages (*as of September 2010-Projected*). 2035 Population was determined using a straight-line projection.

Allocation of Population, Households and Employment Growth

The next step was to allocate the projected growth in population, households and employment to the study area using the traffic analysis zones (TAZs) developed for use in the Win-Fred MPO travel demand model. For population and

households, this process started with known or planned residential developments in Winchester, Stephens City and Frederick County. Initial assignments were made of approximately 73 percent of planned households, and the remaining 27 percent was then assigned to each TAZ in proportion to existing households.

For employment, the assignment of employment growth was considerably more difficult. Known or planned retail developments were identified, and employment growth was estimated based on these specific development plans. This was equal to approximately 30 percent of the projected retail employment growth. In addition, industrial and manufacturing employment growth was allocated to the existing business/industrial sites in proportion to the amount of developable land available. The remainder of area employment was assigned in proportion to existing employment by type.

The assignment of population, household, and employment growth was reviewed in detail by planning staff from the City of Winchester, the Town of Stephens City, and Frederick County, and also by the Win-Fred MPO Technical Advisory Committee. More detail on the land use forecasting process is provided in the Travel Demand Model Methodology report.

Development of Future No-Build Travel Demand Model

The Win-Fred MPO travel demand model was used to project 2035 No-Build traffic volumes. This effort was conducted by adding the information collected in the two previous sections, the future demographic forecast, and the future No-Build transportation network, into the travel demand model. More detailed information on the development of 2035 traffic volumes using the travel demand model are provided in the Travel Demand Model Methodology Report. By 2035, the Win-Fred MPO region is projected to experience a significant increase in vehicle-miles of travel, vehicle-hours of travel and total congested roadway lane-miles. **Table 5-4** displays the projected changes between 2007 and the 2035 No-Build, & 2035 CLRP Build conditions in key travel characteristics.

Table 5-4: Summary of Travel Growth in Future Year Scenarios

Travel Trend*	2007	2035 No-Build	Percent Change 2007 to 2035 No-Build	2035 CLRP Build	Percent Change 2035 No-Build to 2035 CLRP Build
Vehicle-Miles of Travel (VMT)	5,753,022	10,004,065	73.9%	10,021,804	0.2%

Vehicle-Hours of Travel (VHT)	114,550	210,136	83.4%	240,396	14.4%
Congested Roadway Miles - V/C Ratio >/= 1.0	2.01	49.5	2362.7%	41.8	-15.6%

* Trends determined for the Win-Fred MPO region only using the Win-Fred MPO travel demand model.

Analysis of Future No-Build Traffic Congestion

By 2035, the Win-Fred MPO roadway system is projected to become more congested than it is today. 2035 No-Build roadway congestion was evaluated for daily traffic conditions (modeled volumes and modeled volume/capacity (v/c) ratios). Table 5-5 specifies and figures 5-1 and 5-2 illustrate the roadway segments forecasted to operate under various conditions for projected daily volumes and modeled v/c ratios. Just as with the modeled Base Year traffic analysis, congestion can occur when v/c ratios approach 1.00. Severe congestion can occur when v/c ratios exceed 1.00. The long range plan update model analysis includes roadway links only, specific intersections should be modeled through more detailed corridor or preliminary engineering studies.

Table 5-5: 2035 No-Build Network Projected Traffic Volumes and Volume / Capacity Ratios – Selected Segments

Roadway Segment - 2035 No Build Network - WinFred Travel Demand Model	NB/WB Daily Projected Volumes	SB/EB Daily Projected Volumes	Hourly Capacity 2-Way Link	NB/WB Volume / Capacity Ratios	SB/EB Volume / Capacity Ratios
Armistead St From Jubal Early To Breckenridge Ln	5404	5058	1650	0.66	0.61
Fairfax Lane From Cameron Street To N Loudoun St	9965	4408	1000	1.99	0.88
I81 From NB Ramp from I81 at exit 310 to Route 37 To Route 37 east at I81 NB Ramps at Exit 310	13786		1200	1.15	
I81 From Route 37 at I81 exit 310 sb ramps To SB Ramp from Route 37 to I81 at exit 310	14302		1200	1.19	
I81 From VA7 SB Ramp to I81 at Exit 315 To SB ramp from VA7 to I81 exit 315	12858		1100	1.17	
Jubal Early From Jubal Early east of Pleasant Valley To Jubal Early east of Pleasant Valley	18167	15885	5400	0.67	0.59
Pleasant Valley From Cork St To Pleasant Valley north of Cork St	15183	14795	2200	1.38	1.35
Pleasant Valley From Woodstock Ln To	16442	13925	2200	1.49	1.28

Roadway Segment - 2035 No Build Network - WinFred Travel Demand Model	NB/WB Daily Projected Volumes	SB/EB Daily Projected Volumes	Hourly Capacity 2-Way Link	NB/WB Volume / Capacity Ratios	SB/EB Volume / Capacity Ratios
National Ave					
Pleasant Valley From Cork St To Woodstock Ln	14368	13871	2200	1.31	1.26
Pleasant Valley From Cork St To Pleasant Valley north of Cork St	14693	14230	2200	1.34	1.29
SR1322 Fort Collier Rd From Baker Lane To Fort Collier Rd west of Baker Lane	9235	9371	1100	1.68	1.7
SR1322 Fort Collier Rd From SR 783 Brick Kiln Rd To US 11	5783	6045	1100	1.05	1.1
SR657 Senseny Rd From Senseny Rd east of Greenwood Rd To Senseny Rd east of Greenwood Rd	5540	5540	1100	0.53	0.53
SR906 Cork St From Cameron St To Loudoun St	7843	9486	1400	1.12	1.36
SR906 Cork St From Pleasant Valley To Cork St east of Pleasant Valley	6536	7019	1650	0.79	0.85
SR915 Paper Mill Rd From Jubal Early To Featherbed Lane	8811	8701	1650	1.07	1.05
SR915 Paper Mill Rd From Papermill Road south of Tevis St To Papermill Road south of Tevis St	8448	8637	1650	1.02	1.05
Stewart From Cork St To Boscawen St at Cork St	6740	3010	1000	1.35	0.6
US 11 Cameron St From W Piccadilly Street at Cameron Street To Fairfax Lane at Cameron Street	27979		2000	1.4	
US 11 Gerrard St From Handley Blvd at Loudoun St To Gerrard St just west of Millwood at Gerrard	2223	12732	2000	0.22	1.27
US 11 Gerrard St From Gerrard St just west of Millwood at Gerrard To Millwood Ave	2223	12898	2000	0.22	1.29
US 11 Martinsbg Pke From N Loudoun Street at North Cameron St To US 11 south of Fort Collier Rd	9814	9266	1650	1.19	1.12
US 11 Martinsburg Pk From US 11 just north of Route 37 N End To US 11 / Route 37 Just West of Welltown Road		25913	1650		1.57
US 11 Valley Ave From Tevis Street To US 11 Valley Ave north of Hope Dr	10975	11041	2200	1.00	1.00
US 11 Valley Ave From US 11 Valley Ave between Hope Dr and SR 914 Middle Rd To Middle Rd	12038	11933	2200	1.09	1.08

Roadway Segment - 2035 No Build Network - WinFred Travel Demand Model	NB/WB Daily Projected Volumes	SB/EB Daily Projected Volumes	Hourly Capacity 2-Way Link	NB/WB Volume / Capacity Ratios	SB/EB Volume / Capacity Ratios
US 11 Valley Ave From US 11 Valley Ave north of Bellview Ave To US 11 Valley Ave south of Jefferson St	8391	9675	2200	0.76	0.88
US 11 Valley Ave From US 11 Valley Ave north of Hope Dr To US 11 Valley Ave between Hope Dr and SR 914 Middle Rd	11399	11460	2200	1.04	1.04
US 11 Valley Ave From US 11 Valley Ave south of Tevis Street To US 11 Valley Ave south of Tevis Street	11720	11893	2200	1.07	1.08
US 11 Valley Pk From US 11 south of SR 652 Shawnee Dr To Apple Valley Road	9271	9603	2100	0.88	0.91
US 50 Millwood Ave From Millwood Ave at I81 Exit 313 SB Ramps To Millwood Ave just west of I81 Exit 313 SB Ramps	38900	33618	5400	1.44	1.25
US 50 Millwood Ave From Millwood Ave just west of I81 Exit 313 SB Ramps To Millwood Ave ext at Jubal Early	34535	30659	5400	1.28	1.14
US 50 Millwood Ave From Millwood Ave just west of I81 Exit 313 SB Ramps To Millwood Ave just west of I81 Exit 313 SB Ramps	38278	33518	5400	1.42	1.24
US 50 Millwood Ave From Millwood Ave north of Pleasant Valley To US 50 Millwood Ave south of Kent	12533	9838	2200	1.14	0.89
US 50 Northwestern Pk From nb ramp from I81 at exit 313 to US 50 To US 522 at US 50	28221	40650	4400	1.28	1.85
US 50 Northwestern Pk From SR 688 To N Hayfield Rd		9125	2400		0.38
US 50 Northwestern Pk From US 50 Bridge over I81 Exit 313 west end To nb ramp from I81 at exit 313 to US 50	37783		2700	1.4	
US 50 Northwestern Pk From Wardensville Grade To US 50 at west end of Round Hill Rd	17169	17065	4800	0.72	0.71
US 522 N Frederick Pk From US 522 at southbound Route 37 ramps To Apple Pie Ridge Rd	27963		2700	1.04	
US 522 N Frederick Pk From US 522 west of Apple Pie Ridge Rd To Apple Pie Ridge Rd	23917	24034	5400	0.89	0.89
VA 7 Berryville Av From VA 7 Berryville Ave east of Fort Collier To VA 7 just west	23489	28281	5400	0.87	1.05

Roadway Segment - 2035 No Build Network - WinFred Travel Demand Model	NB/WB Daily Projected Volumes	SB/EB Daily Projected Volumes	Hourly Capacity 2-Way Link	NB/WB Volume / Capacity Ratios	SB/EB Volume / Capacity Ratios
of I81 exit 315 ramps					
VA 7 National Ave From Just West of Pleasant Valley at National Ave To Pleasant Valley at National Ave	13660	15564	2700	1.01	1.15
VA 7 National Ave From National Ave at VA 7 To Pleasant Valley	25179	29599	2700	1.87	2.19
VA 7 National Ave From SR 784 Smithfield Ave To VA 7 National Ave east of SR 784 Smithfield Ave	13420	15326	2700	0.99	1.14
VA 7 National Ave From VA 7 National Ave east of SR 784 Smithfield Ave To Just West of Pleasant Valley at National Ave	13660	15564	2700	1.01	1.15
W Piccadilly From Cameron Street To W Piccadilly between Kent and Cameron St					

* V/C Ratio is the ratio of peak hour volume to hourly capacity. A value of 1.00 represents the theoretical capacity of a roadway segment.

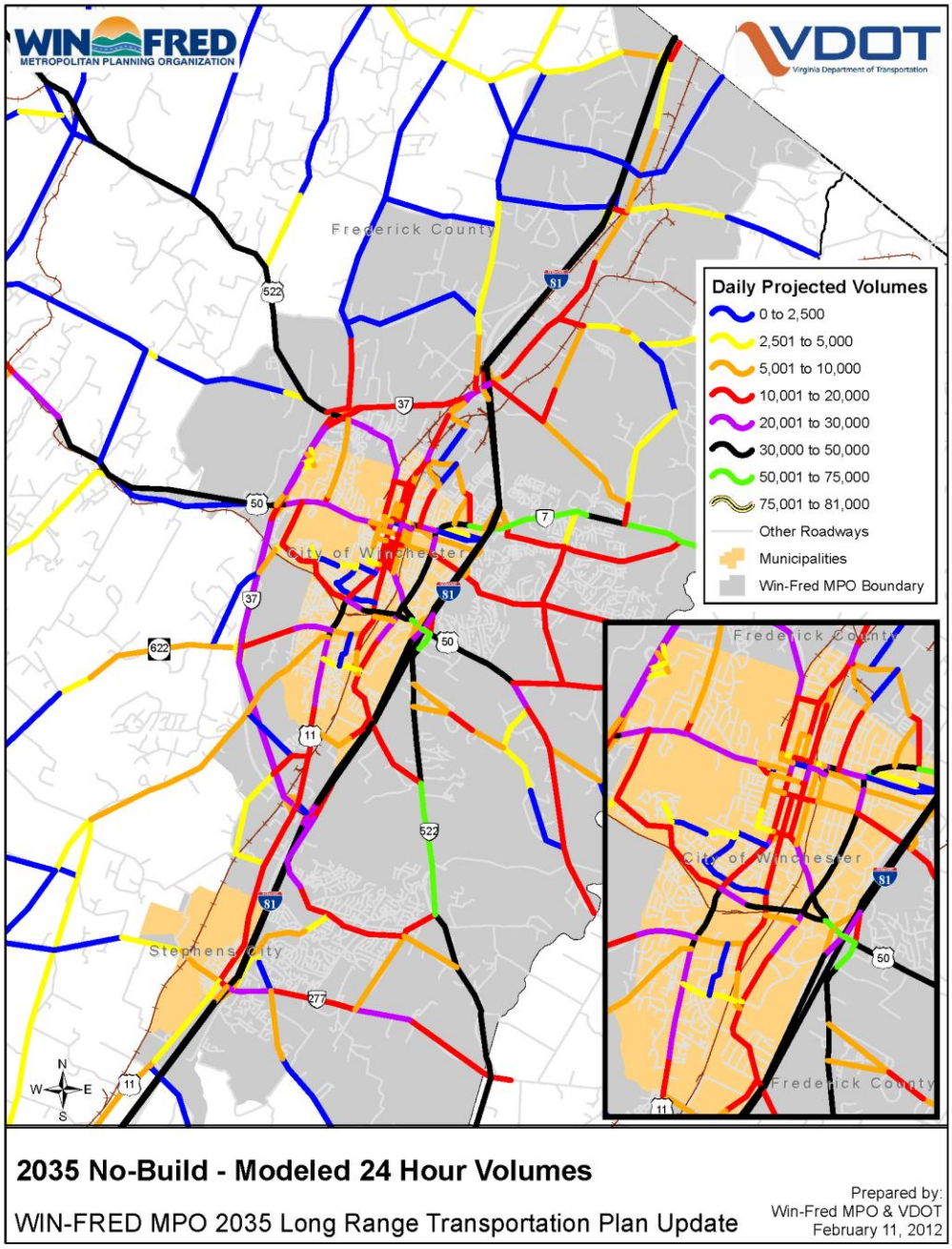


Figure 5-1: 2035 No-Build - Modeled 24 Hour Volumes

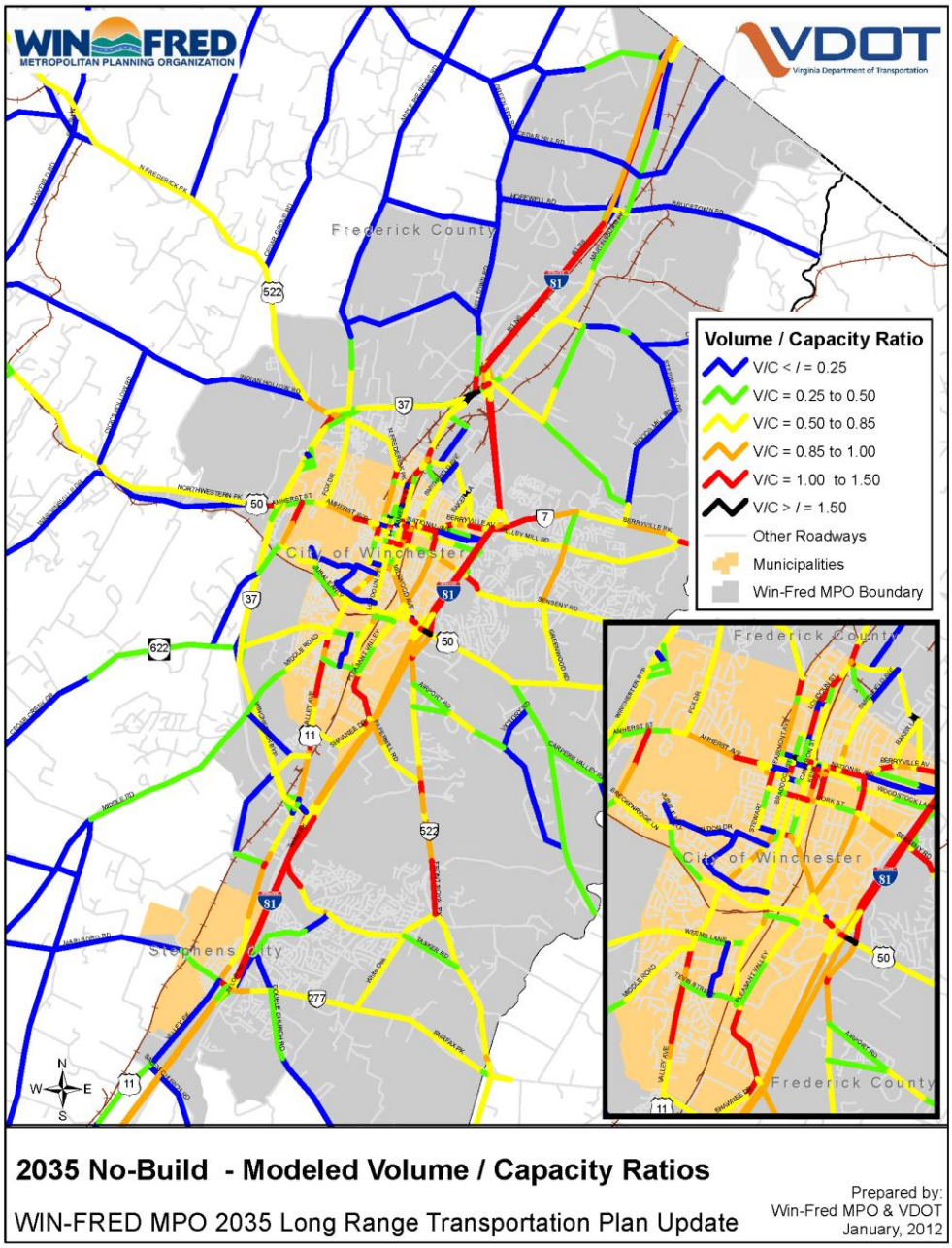


Figure 5-2: 2035 No-Build - Modeled Volume / Capacity Ratios

Alternatives Analysis 2035 CLRP Build Networks

While Vision Plan project scenarios were analyzed in the 2030 plan, a full vision plan analysis was not included in the 2035 plan update, only the CLRP 2035 Build-Network, 2035 No-Build Scenarios were modeled and compared to the base year. An additional model analysis of the CLRP 2035 Build Network plus the Jubal Early / Meadow Branch extensions has also been included in this plan update. Additional future scenarios (including a full vision plan analysis) for analysis will be developed by the MPO Technical Advisory Committee and approved by the MPO Policy Board and included as work items in future Win-Fred MPO Unified Planning Work Programs. Specific projects for future scenario analysis should be pulled from the adopted Vision Plan list of projects.

The results of the 2035 CLRP Build Network analysis are included in Figures, 5-3, 5-4, 5-5 and Table 5-6. The CLRP 2035 Build Network includes the following network assumptions for changes in roadway capacity.

All future year scenarios include those project currently adopted in the VDOT FY2012 Six-year improvement program (SYIP). Detailed project descriptions for the currently adopted SYIP projects can be found here: http://syip.virginiadot.org/Pages/allProjects.aspx . SYIP program projects included as fully built out in the future 2035 LRTP plan build scenarios include:

- I-81 Interchange Improvements
  - Exit 307 (Route 277)
  - Exit 310 (Route 37S/642)
  - Exit 313 (US 17/50/522)

- Hope Drive / Tevis Street Extension – from US 11 to US 522

- Warrior Drive Extension and Widening from Route 277 to Opequon Creek (north of Route 642)

- Route 37 Extension from I-81 exit 310 to US Route 522
  - Interchange - Route 37 @ Warrior Drive
  - Partial Interchange - Route 37 @ Route 522

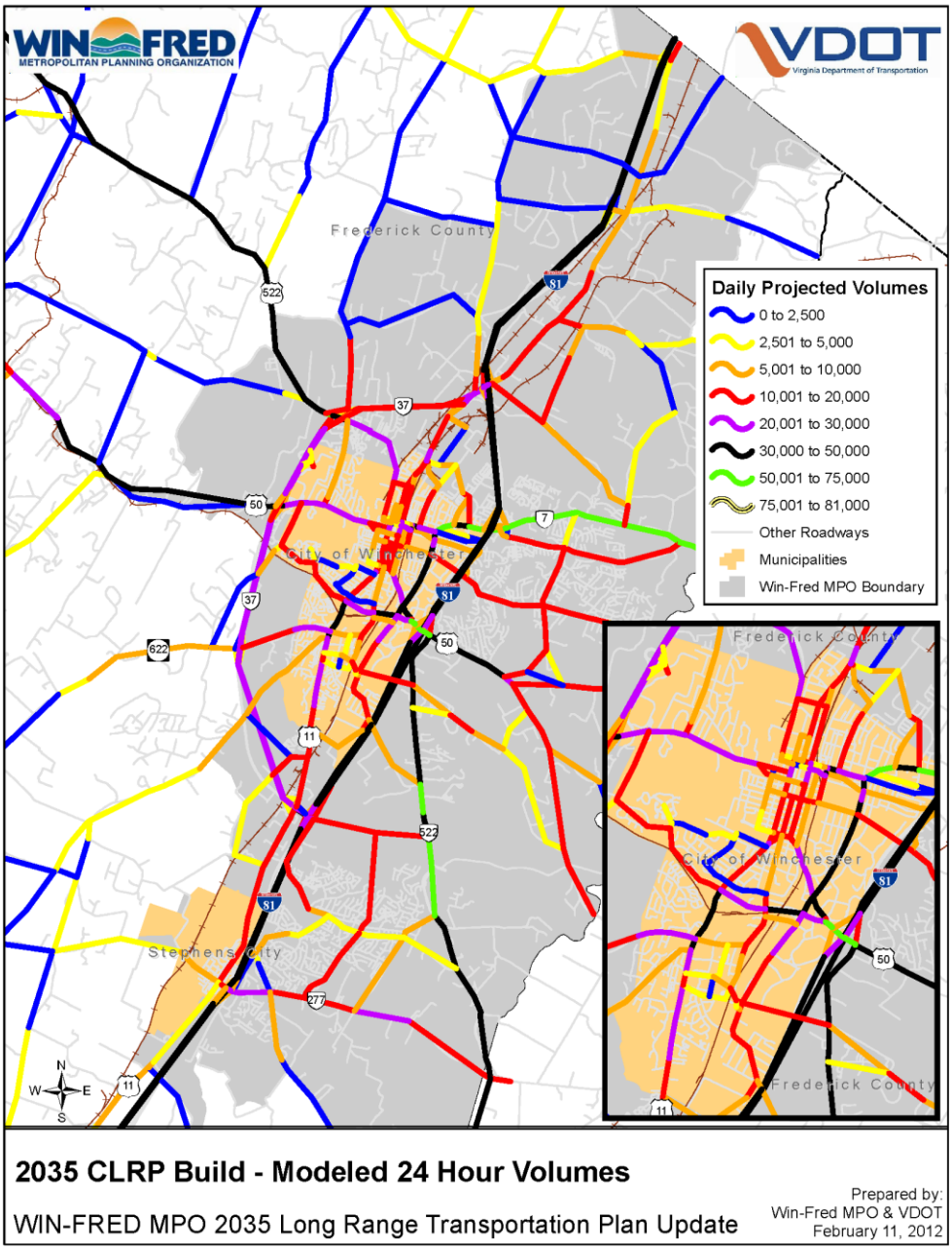


Figure 5-3: 2035 CLRP Build – Modeled 24 Hour Volumes

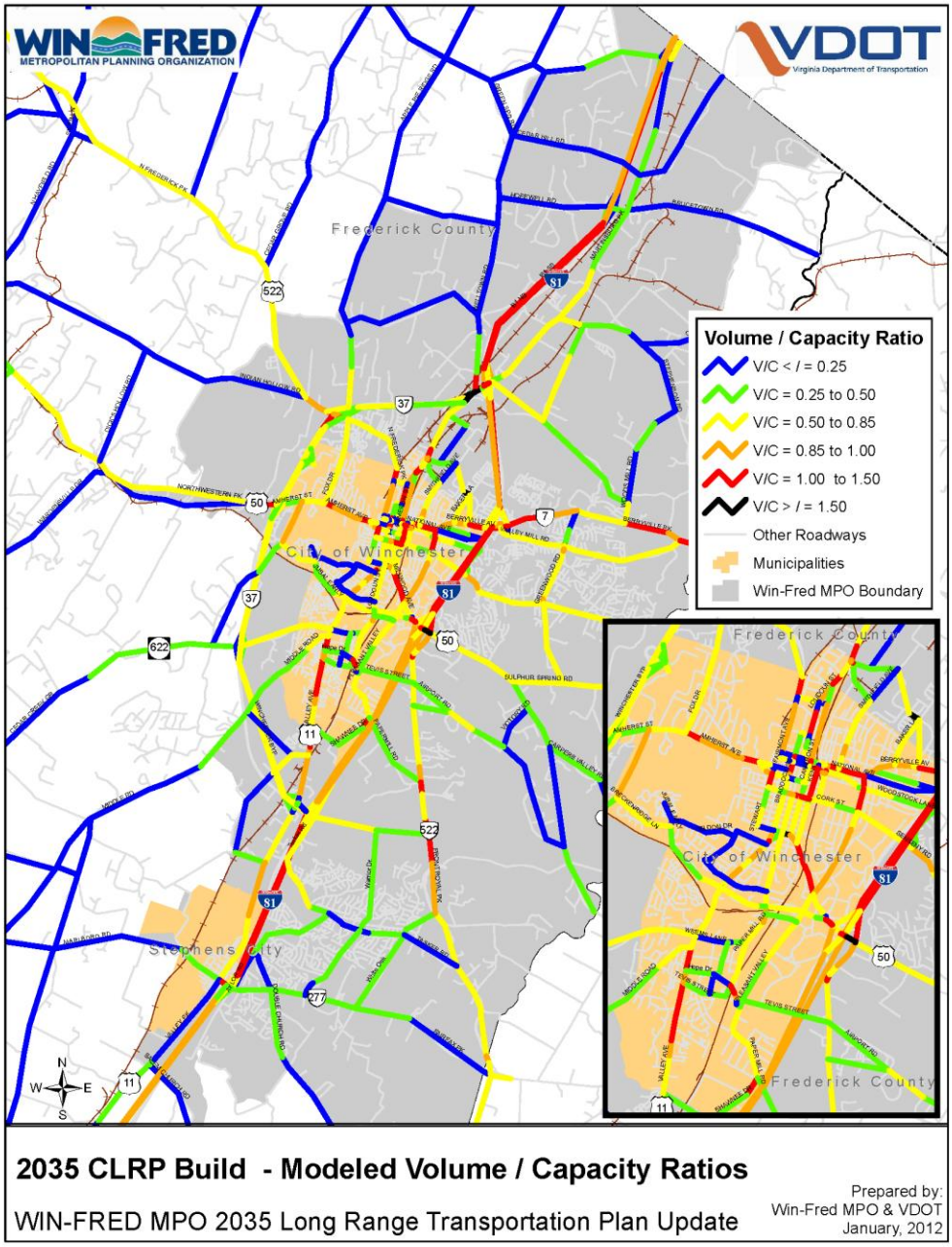


Figure 5-4: 2035 CLRP Build – Modeled Volume / Capacity Ratios

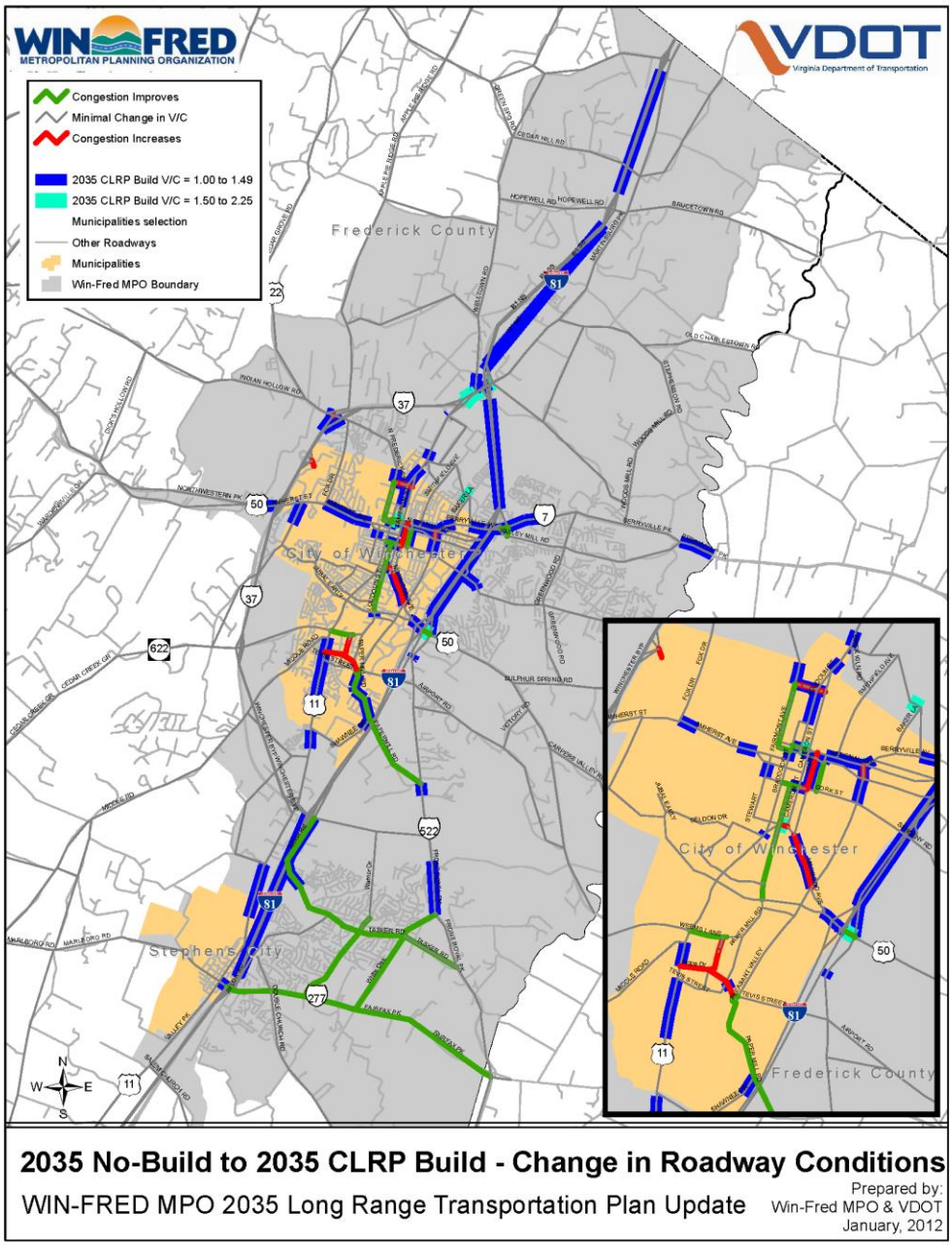


Figure 5-5: Change in Roadway Conditions 2035 No-Build Network to 2035 CLRP Build Network

Table 5-6: 2035 CLRP Build Network Projected Traffic Volumes and Volume / Capacity Ratios – Selected Roadway Segments

Roadway Segment - 2035 CLRP Build Network - WinFred Travel Demand Model	NB/WB Daily Projected Volumes	SB/EB Daily Projected Volumes	Hourly Capacity 2-Way Link	NB/WB Projected Volume / Capacity Ratios	SB/EB Projected Volume / Capacity Ratios
I81 from I81 SB just north of exit 313 to I81 at Exit 313 sb ramp to Millwood Ave		42413	3800		1.12
I81 from NB Ramp from Route 37 to I81 at exit 310 to Papermill Road at I81 overpass east end	35587		3800	0.94	
Proposed Route 37 from I81 Exit 310 to Proposed Warrior Drive	9445	9601	3300	0.57	0.58
Proposed Route 37 from Proposed Warrior Drive to US 522	8044	8324	3300	0.49	0.5
SR1204 Wilkins Dr from Wilkins Dr north of Senseny Road to Wilkins Dr north of Senseny Road	2698		825	0.33	
SR1322 Fort Collier Rd from Baker Lane to Fort Collier Rd west of Baker Lane	8674		550	1.58	
SR644 Papermill Rd from US 522 to Papermill Road west of US 522	3262	3204	1650	0.4	0.39
SR656 Greenwood Rd from Greenwood Rd south of Valley Mill Rd to Valley Mill Rd	7944		825	0.96	
SR657 Senseny Rd from Senseny Rd west of Greenwood Rd to Senseny Rd west of Greenwood Rd		5853	825		0.71
SR657 Senseny Rd from Senseny Rd west of Greenwood Rd to Senseny Rd west of Greenwood Rd	5319		825	0.64	

Roadway Segment - 2035 CLRP Build Network - WinFred Travel Demand Model	NB/WB Daily Projected Volumes	SB/EB Daily Projected Volumes	Hourly Capacity 2-Way Link	NB/WB Projected Volume / Capacity Ratios	SB/EB Projected Volume / Capacity Ratios
SR657 Senseny Rd from Senseny Road east of Wilkins Dr to Senseny Rd west of Greenwood Rd		7883	825		0.96
SR906 Cork St from Loudoun St to Cameron St		7225	700		1.03
US 11 Cameron St from Cameron St north of Cork St to Boscawen St	17465		3000	0.58	
US 11 Cameron St from Commercial St to North Cameron St south of N Loudoun at N Cameron St	7162		2000	0.36	
US 11 Cameron St from Fairfax Lane to N Cameron St north of Fairfax Lane	18795		2000	0.94	
US 11 Cameron St from Millwood Ave at Gerrard St to US 11 north of Gerrard St	17505		3000	0.58	
US 11 Valley Pk from US 11 North of VA 277 to US 11 North of VA 277	5564	5701	1650	0.67	0.69
US 11 Valley Pk from VA 277 Fairfax Pk to US 11 North of VA 277	6719	6856	1650	0.81	0.83
US 50 Northwestern Pk from SR 688 to US 50 west of SR 688	9644	9711	4800	0.4	0.4
US 50 Northwestern Pk from US 50 between US 522 and Sulphur Spring Rd to US 522 at US 50	15675	17934	4400	0.71	0.82
US 50 Northwestern Pk from US 522 at US 50 to US 522 at US 50	37495	35069	4400	1.7	1.59

Roadway Segment - 2035 CLRP Build Network - WinFred Travel Demand Model	NB/WB Daily Projected Volumes	SB/EB Daily Projected Volumes	Hourly Capacity 2-Way Link	NB/WB Projected Volume / Capacity Ratios	SB/EB Projected Volume / Capacity Ratios
US 522 Fairmont Ave from Fairfax Lane to Fairmont Ave US 522 just north of Fairfax Lane	764	9241	2000	0.08	0.92
US 522 Front Royal Pk from US 522 just north of Papermill Rd to US 522 north of Papermill Rd	23373	21821	5400	0.87	0.81
US 522 N Frederick Pk from Gainesboro Red west at US 522 to US 522 north of Gainesboro Rd	16707	16733	6400	0.52	0.52
VA 7 Berryville Av from Fort Collier to VA 7 just west of Fort Collier Rd	21152	22719	5400	0.78	0.84
VA 7 Berryville Pk from VA 7 east of I81 to VA7 between Valley Mill Road and Greenwood Road	28134	27491	5400	1.04	1.02
VA 7 Berryville Pk from Greenwood Rd to VA 7 east of I81	25757	25151	5400	0.95	0.93
W Piccadilly from W Piccadilly between Kent and Cameron St to Cameron Street	10966	16048	2600	0.84	1.23

* V/C Ratio is the ratio of peak hour volume to hourly capacity. A value of 1.00 represents the theoretical capacity of a roadway segment.

Committed Transportation Improvements

Committed transportation improvements are improvements that are already guaranteed funding through VDOT's Six-Year Improvement Plan process or other funding sources. While this could also include projects that have partial funding (through a certain part of the design, right-of-way or construction phase), this list has been limited to those projects that will be fully constructed and open for use. These SYIP / TIP committed projects are shown in **table 5-7.**

Other projects noted include those that have been committed through public-private partnerships (PPP), including but not limited to those projects noted as developer proffers or related economic development partnerships. Each PPP project is identified with a number that coincides with information shown below in **Table 5-8** for the City of Winchester and Frederick County.

Table 5-7: VDOT SYIP / Winfred MPO TIP Committed Projects FY12-FY17

Description	Route	Road System	Jurisdiction	Estimate	Previous	FY12	FY13-17	Balance
				(Values in Thousands of Dollars)				
I-81 - Interchange Modification, Exit 310	I81	Interstate	Frederick County	$37,882	$2,800	$5,408	$29,674	$0
I-81 Exit 317 Extend NB Decel Lane	I81	Interstate	Frederick County	$713	$150	$0	$450	$113
I-81 Exit 307 Interchange Relocation Study	I81	Interstate	Frederick County	$1,300	$1,300	$0	$0	$0
US 11 Safety Study (PE Only)	US 11	Primary	Frederick County	$50	$50	$0	$0	$0
Install Traffic Signal At Intersection Of US 11 & Route 672	US 11	Primary	Frederick County	$263	$326	$24	$0	
Route 37 Eastern Bypass (PE Only)	37	Primary	Frederick County	$5,800	$1,563	$0	$4,237	$0
Route 277 - Widen To 5 Lanes	277	Primary	Frederick County	$33,068	$2,909	$16,000	$14,159	$0
US 522, Frederick Co., Structure #08156 Bridge Replacement	US 522	Primary	Frederick County	$1,522	$771	$0	$0	$751
US 522 - Construct Left Turn Lane	US 522	Primary	Frederick County	$39	$39	$0	$0	$0
Route 623 - Replace Bridge Over Cedar Creek Structure #6908	623	Secondary	Frederick County	$1,734	$204	$32	$1,234	$265
Improve Alignment Valley Mill Rd At VA 7	659	Secondary	Frederick County	$2,000	$0	$1,000	$1,000	$0
Improve Drainage Along Abrams Creek	9999	Urban	Multi-jurisdictional: Winchester MPO	$2,000	$0	$1,000	$1,000	$0
Weems Lane and Loudoun Street - 5 Lanes	U000	Urban	Winchester	$6,527	$716	$0	$0	$5,811

Table 5-8: Public Private Partnership Committed Projects for City of Winchester & Frederick County

Project Description	Location	Limits	Funding
4-lane divided roadway	E. Tevis Street[Z]	Legge Blvd to I-81 overpass	Developer and/or gov't funding
2-lane	Packer St extension	Packer St to W Cedarmeade Ave	Developer to build with Phase 2 houses
traffic signal	Adams Dr	at Legge Boulevard	Developer proffer
2-Lane on 4-Lane RW	Meadow Branch Ave[Y]	Merrimans Ln to Buckner Dr	Developer proffer
4-lane divided roadway	W. Jubal Early Dr extension[Y]	Proposed T-intersection of Meadow Branch Ave to Proposed Interchange at Route 37	Developer Proffer
3-Lane roadway	Hope Dr eastern extension[Z]	Wilson Blvd to Pleasant Valley Rd (includes realigned Papermill & Tevis)	City/EDA
2-lane roadway	Battaile Dr Extension	CSX RR to Valley Ave	Governor's TPOF
4-lane roadway	S. Pleasant Valley Rd extension	Battaile Dr to E. Cedarmeade Ave	Developer and/or gov't funding

Z: Included in 2035 CLRP; **Y:** Modeled as Additional Scenario in 2035 LRTP Update

An additional model analysis of the CLRP 2035 Build Network plus the Jubal Early Drive / Meadow Branch Avenue extensions have been included in this plan update. Results of this analysis are shown in figures 5-6 and 5-7. The scenario includes the all of the network assumptions referenced in the 2035 Build network plus the following links

- Extension of Meadow Branch Ave north to Amherst St
- Connection from W. Jubal Early Drive West to a new interchange at Route 37
- Connection south from new W. Jubal Early Drive south to Cedar Creek Gr.
- Realignment of Merrimans Lane into new Jubal Early Drive
- Diamond interchange of Jubal Early Drive and Route 37

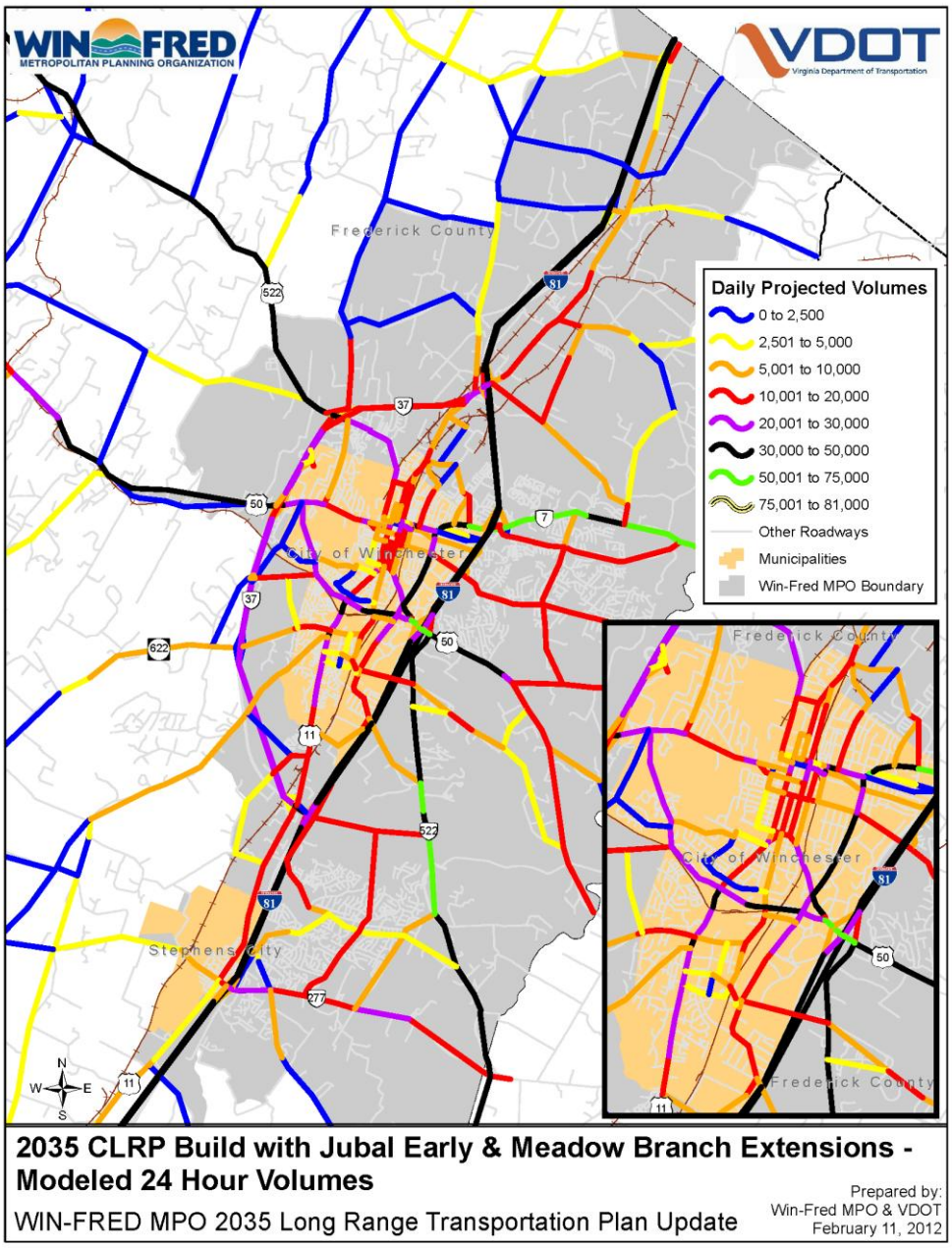


Figure 5-6: 2035 CLRP Build with Jubal Early & Meadow Branch Extensions Modeled Volume

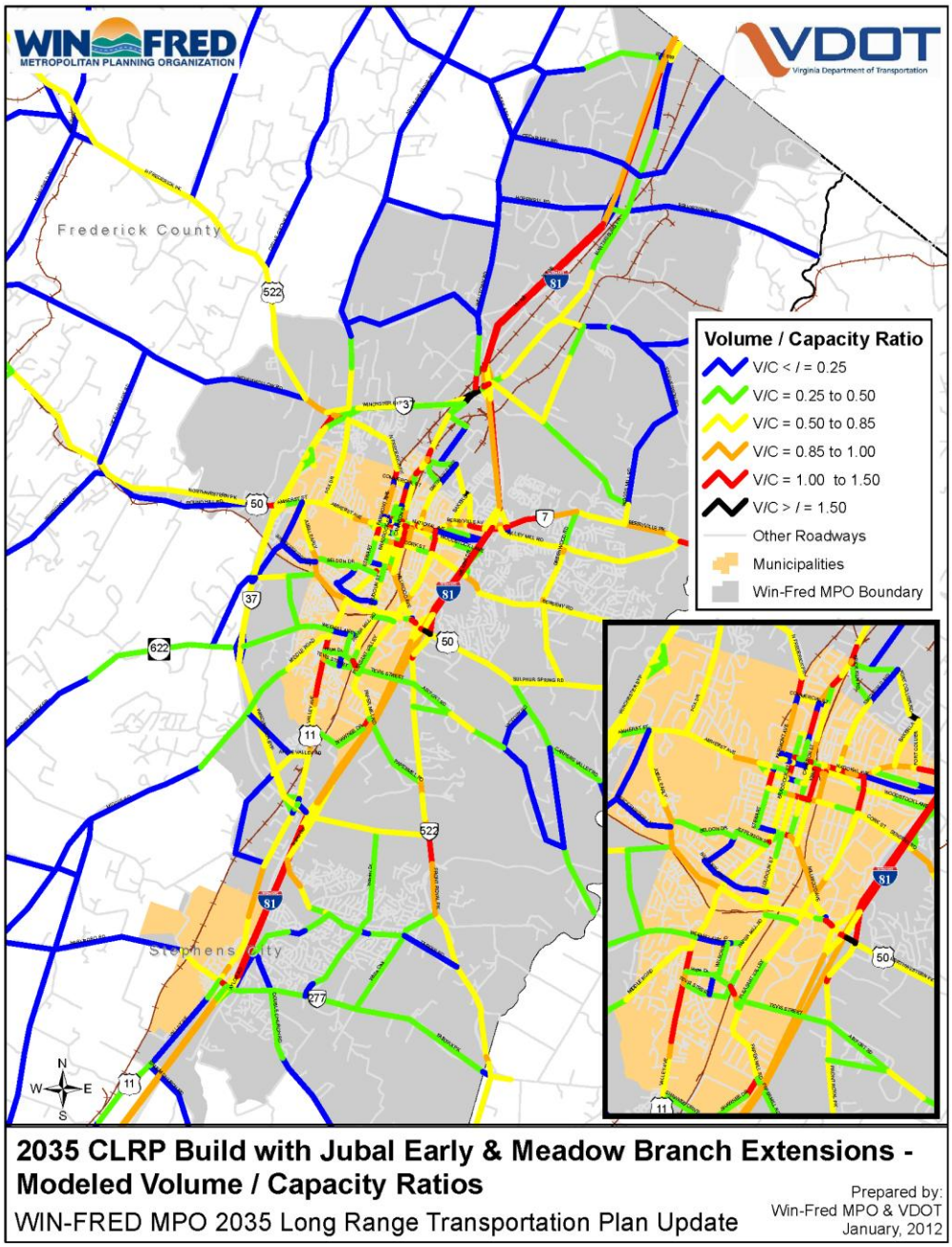


Figure 5-7: 2035 CLRP Build with Jubal Early & Meadow Branch Extensions Volume / Capacity

Future No-Build Transit Forecast

To identify the projected growth in transit demand between 2010 and 2030 the transit ridership model was applied to projected demographics and to the existing Winchester Transit service area in 2030. Updates to the Transit ridership model to extend out to 2035 may be included in future MPO UPWP work task. To provide a baseline calculation for future transit ridership (boardings by TAZ) it was assumed that no modification would be made to the existing Winchester Transit service. Based on the 2010 demographics for the existing Winchester Transit service area the transit ridership model projected that there would be 347 one-way trips (as compared to the 358 estimated one-way trips from the 2004 onboard survey). Boardings by TAZ vs. observed boarding locations are shown in **Figure 5-5**. Applying the transit ridership model using 2035 demographics yields an estimate of, 484 one-way trips within the existing service area. The 2035 boardings by TAZ are shown in **Figure 5-6**. This represents almost a 40 percent increase in trips due entirely to increase in employment and population within the City of Winchester.

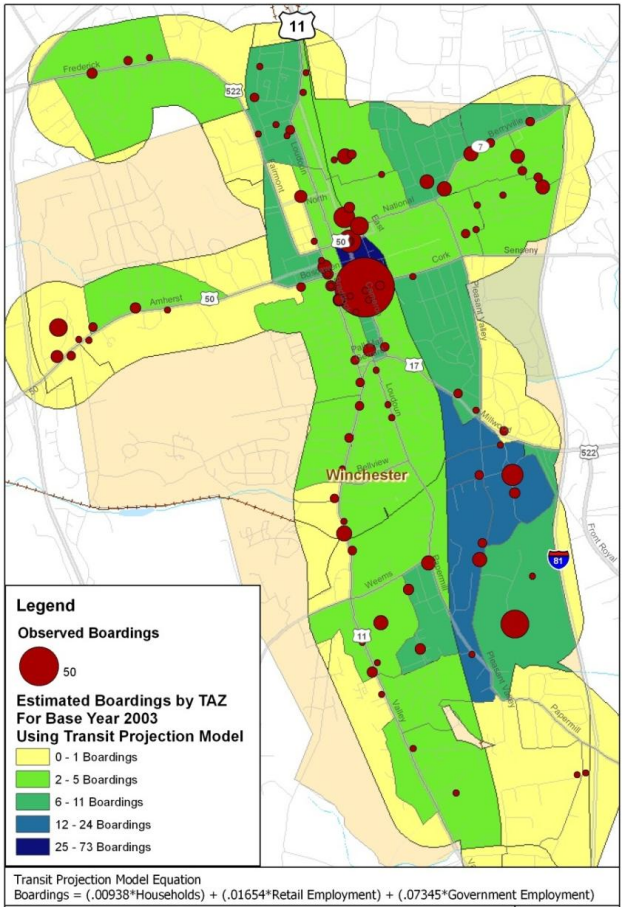


Figure 5-5: Observed Boardings vs. Predicted Boardings by TAZ

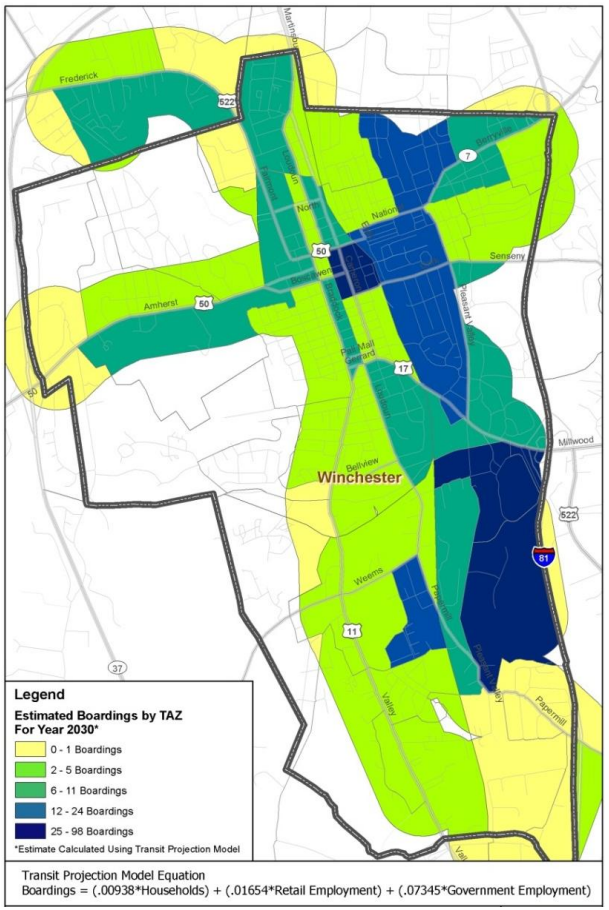


Figure 5-6: Projected 2030 Transit Boardings by TAZ

Transit Service Expansion into Frederick County

Winchester Transit continues to work with Frederick County to improve transit service in Frederick County. This project has not as of yet been implemented though possible routes have been included in the 2011 WinTran Transit Development Plan. The initial demonstration project will only provide enough funding for the operation of one or two new routes that extend into Frederick County. As a result it is important to identify the most cost effective routes. This section of the report uses existing and projected demographics for the region to identify areas that would be expected to have the highest transit ridership within the county. In addition to identifying areas that have the highest possible transit ridership within the county, four route concepts are also assessed. There are four route concepts for possible Frederick County Routes.

1. Kernstown/Stephens City Route
2. US 522S/Senseny Road/Regency Lakes Route
3. Stonewall Industrial Park Route
4. US 50W/Virginia Farm Market Route

Each of these routes is analyzed in detail in the TDP to assess their potential impact and the resources that would be required to operate them.

Identification of Areas in Frederick County with High Transit Ridership Potential

The current and future demographics were used to identify locations in Frederick County that have, or could have (in 2035) significant transit demand. This assessment was included in the 2030 plan but not updated for 2035. A future update to this analysis should be considered as a separate MPO Unified Planning Work Program (UPWP) item after detailed 2010 census data is finalized for the Winchester Frederick County urbanized area. The demographics that were analyzed for the 2030 plan are the same as the demographics that are used in the transit ridership model:

1. Population by TAZ
2. Retail Employment by TAZ
3. Government Employment by TAZ

The 2003 and 2030 demographic densities by TAZ are shown in **Figures 5-8** through **5-13**. The density ranges that were selected for each of the demographics were chosen because they effectively show the densities that currently exist in the City of Winchester. The analysis for service in Frederick County assumed that candidate locations for future service should have similar demographic densities as the areas of the City of Winchester currently served.

Review of the population data for the area shows that only a few of the TAZs located outside of the city currently have comparable population densities as the TAZs inside the city (assumed 4 people per acre or higher.) These areas are located south of Winchester in and around the Stephens City and to the east of Winchester along Route 7. The majority of Frederick County currently lacks sufficient population density to warrant fixed route public transportation. By 2035 the total population for the City of Winchester and Frederick County is projected to increase from about 89,000 people to almost 141,000 people. This represents a 58 percent increase in population. However, because of the rural nature of the area, only a few areas outside of the City of Winchester are projected to have significant population densities by 2035. The 681 acre TAZ between Route 37 and Winchester is projected to have the greatest growth in population with an increase of almost 8,000 people. With a future population density over 10 people per acre this TAZ would be a prime candidate for Winchester Transit service expansion. Other areas with notable increases in population density include the TAZs that surround Stephens City.

The projections for retail and government employment, the employment categories identified as being related to use of transit service, show similar patterns. Both the existing and future employment projections show that the TAZs located within the city are the only TAZs with significant densities for these types of employment. This represents employment growth within the existing service area and would not warrant, by itself, expansion of service into the county.

The only TAZ outside of the existing WTS service area that is projected to have a significant increase in retail employment density by 2003 is located in the northwest corner of the I-81 and Martinsburg Pike interchange. This TAZ is located about 1.5 miles north of the existing portions of WTS Route 4. Future route modifications could be made to incorporate this location into the service area of Route 4 or an additional route could be added that would service the area and the neighborhoods along Loudoun Street. If an additional route is added it would also allow Route 4 to be extended further into the county along US 522. Based on the existing demographics these areas to the north of Winchester City currently do not support fixed-route transit, but as the area develops over the next 25 years fixed-route transit service will become a more sustainable transportation mode.

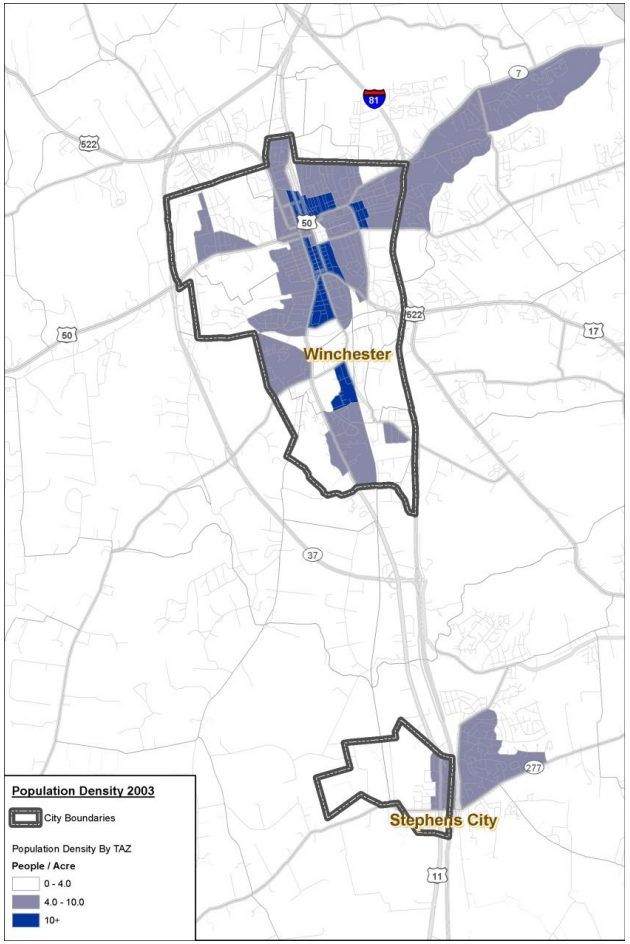


Figure 5-8: 2003 Population Density by TAZ

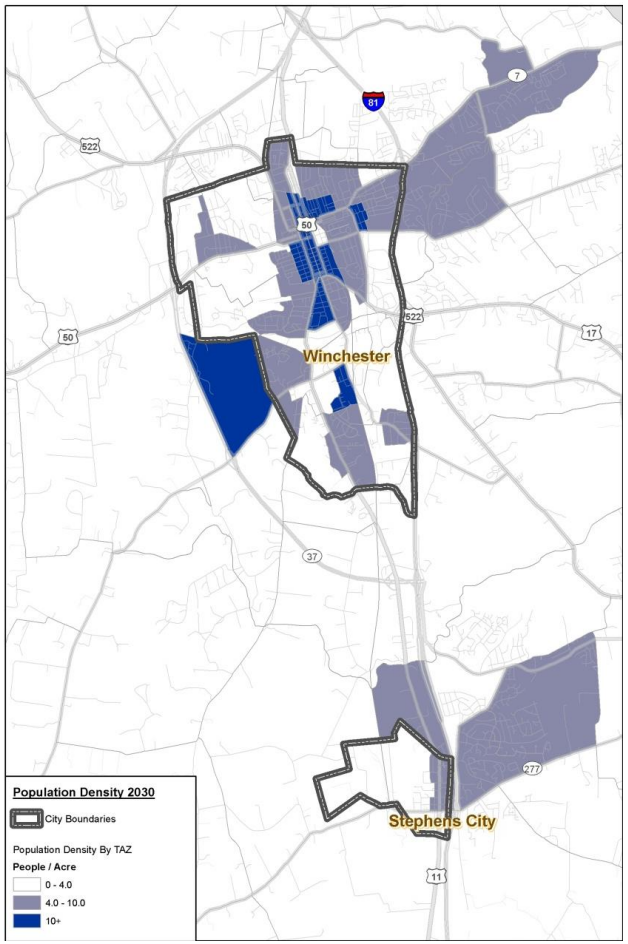


Figure 5-9: 2030 Population Density by TAZ

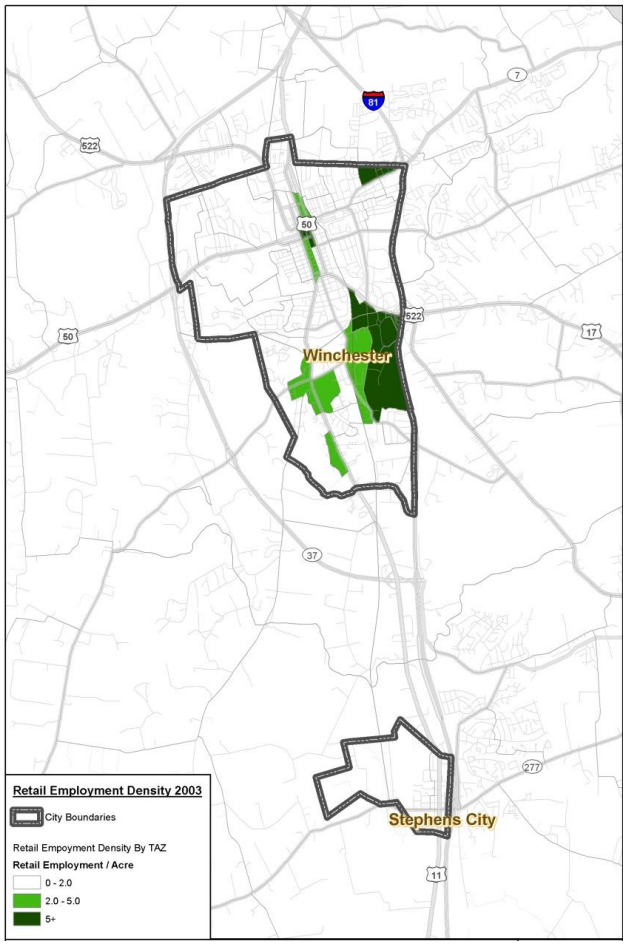


Figure 5-10: 2003 Retail Employment Density by TAZ

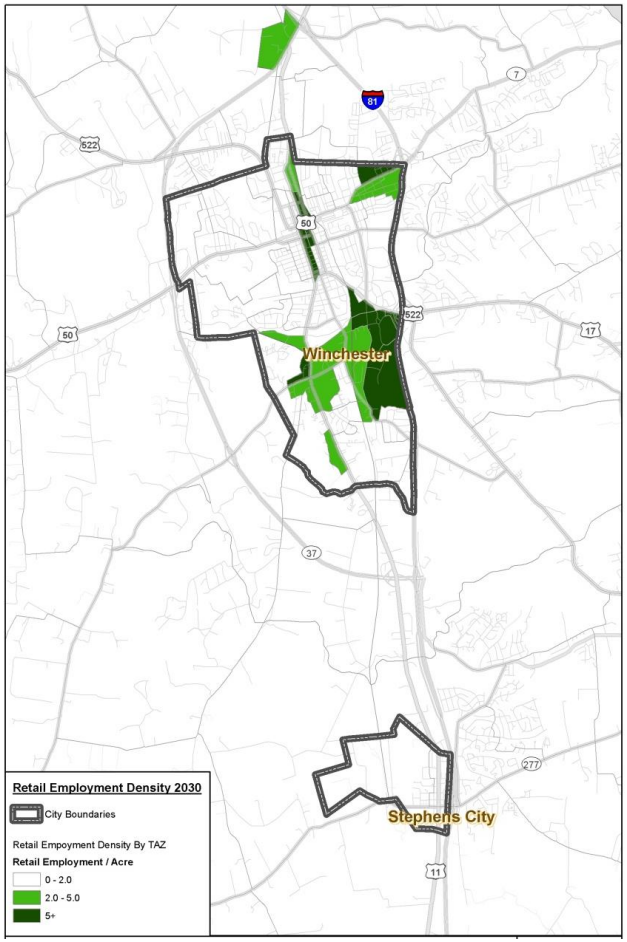


Figure 5-11: 2030 Retail Employment Density by TAZ

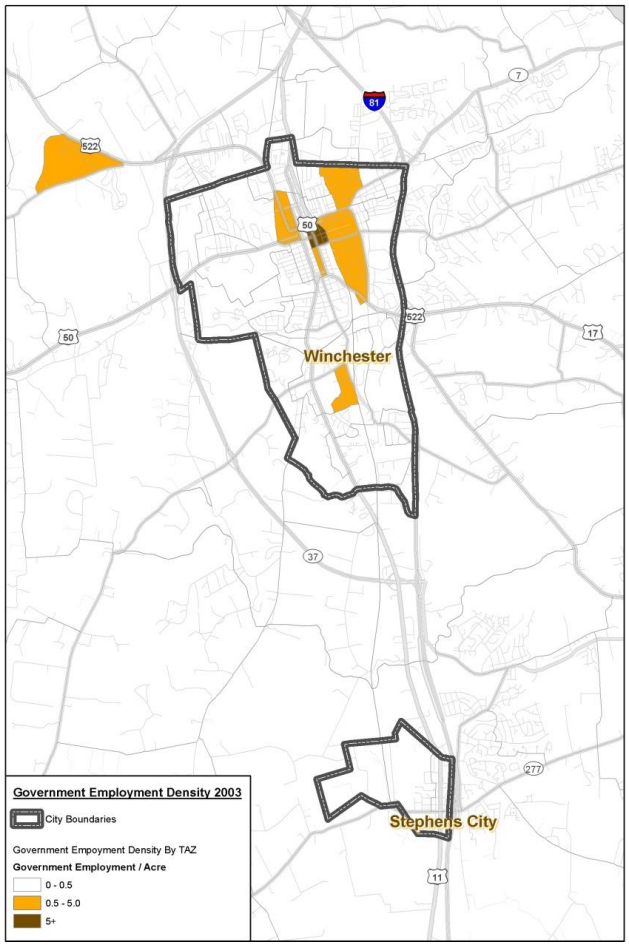


Figure 5-12: 2003 Government Employment Density by TAZ

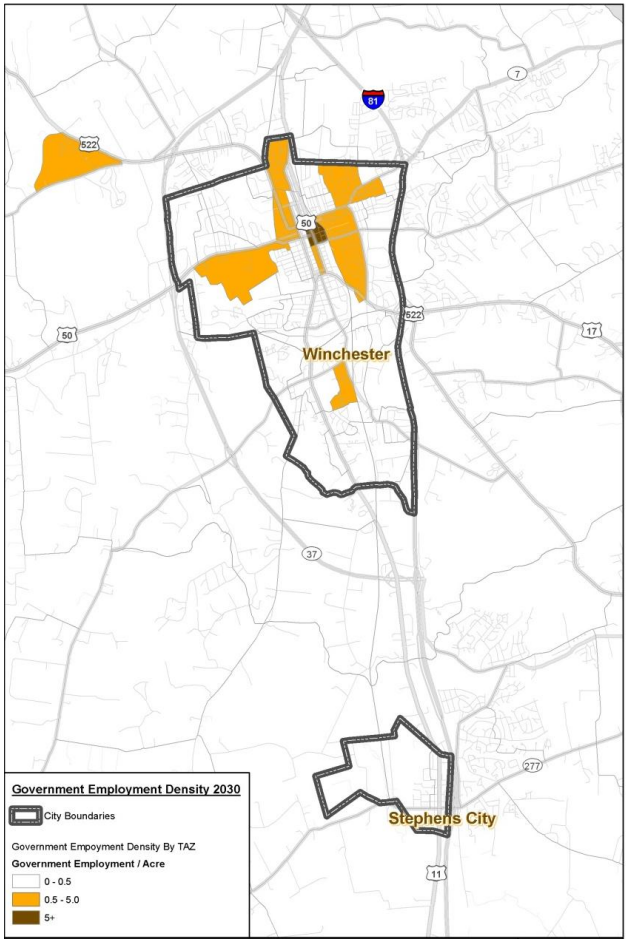


Figure 5-13: 2030 Government Employment Density by TAZ

Looking at each individual demographic characteristic of a TAZ separately only provides a limited understanding of the overall characteristics of a TAZ. To provide a more complete picture of the transit demand for each TAZ, the transit projection model was used to predict transit ridership for each TAZ. **Figures 5-14** and **5-15** show one-way transit trip density by TAZ for 2010 and 2030, respectively. **Figure 5-14** shows that within the City of Winchester almost all of the TAZs currently have a projected transit one-way trip density of 0.025 trips per day per acre or higher. Almost none of the TAZs in the County have a 0.025 trips per day per acre. The only exceptions to this are a few TAZs that are located in or around Stephens City. **Figure 5-15** shows that by 2030 only a handful for additional TAZs will be projected to have a transit trip density that is higher than 0.025 trips per acre.

If 0.025 one-way transit trips per acre per day are used as a minimum threshold to identify locations to expand fixed-route transit service, only a few locations outside of the City of Winchester would currently warrant expansion of transit service. These locations include:

- South along Valley Avenue to Stephens City
- North and west along US 522
- North and east along Route 7 and Valley Mill Road

As the region is developed during the next 25 years transit service could also be expanded to the following locations that are projected to have significant population and employment growth:

- The area between Route 37 and the City of Winchester
- The area between I-81 and US 522 south of Winchester
- The area just north of Stone Wall Industrial Park Area at I-81 and Route 37 limits

Since many of these areas are currently undeveloped, the exact routes and services required will need to be tailored to the future developments. However since these areas are clustered around Winchester's perimeter it would make sense to keep downtown Winchester as the central transfer location for all future service. This would provide better connectivity of services, allowing the new service direct connection and transfers to the existing services in Winchester. It is also recommended that future routes be developed to take a half hour or full hour to service the route. This will allow for easy integration into the existing system that is currently comprised of six half-hour routes. This would keep the system relatively simple for passengers to understand that on the hour or on the half-hour buses arrive and depart from City Hall.

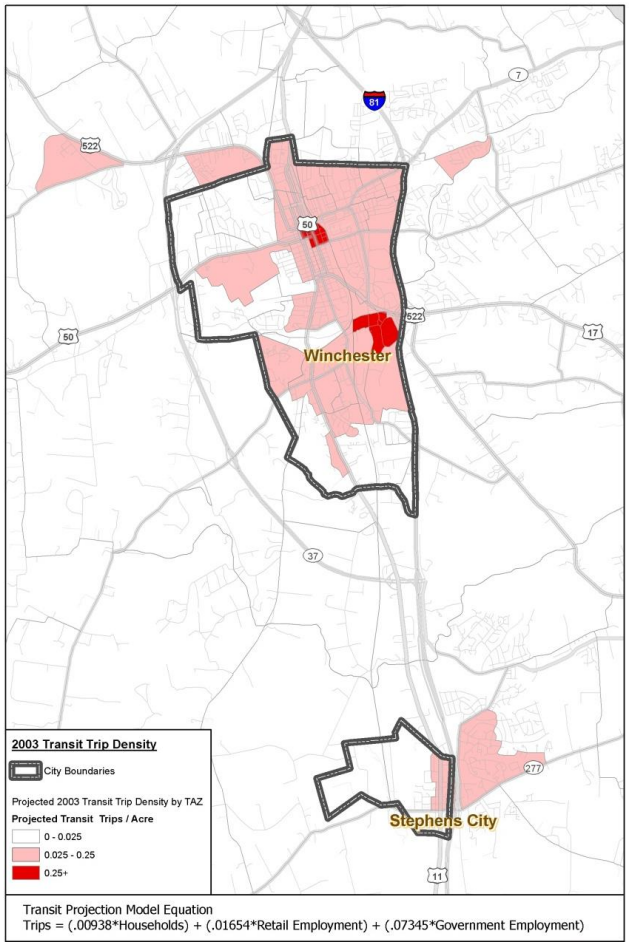


Figure 5-14: 2003 Transit Trip Density by TAZ

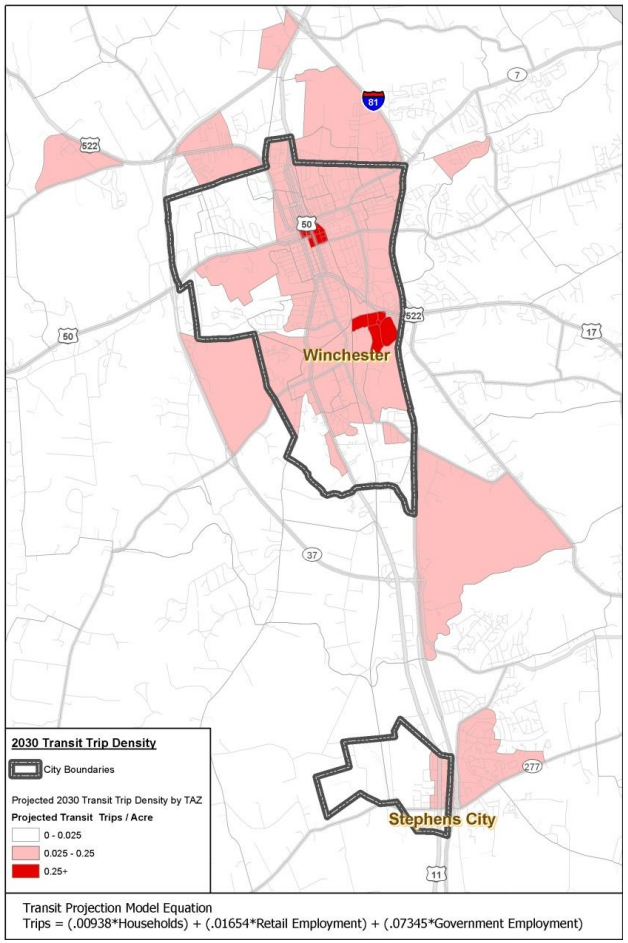


Figure 5-15: 2030 Transit Trip Density by TAZ

Future Bicycle and Pedestrian Travel Needs

The Win-Fred MPO completed a MPO bicycle and pedestrian mobility plan in 2007. This plan addresses short, medium and long-term improvements to improve these transportation connections across jurisdictional boundaries to provide a more cohesive and connective bicycle and pedestrian network.

Future Aviation Needs

The Winchester Regional Airport is projected to continue to serve general aviation needs into the future. According to forecasts in the Virginia Air Transportation System Plan Update (VATSPU2), the Winchester Regional Airport is expected to grow at an average annual growth rate of 1.9 percent. By 2035, this would results in a total of 140 based aircraft. The primary long-range capital improvement will be in the addition of T-hangars. T-hangars are individual aircraft storage hangars, similar to individual car garages; however, they are arranged adjacent to each other, alternating nose, tail, nose, etc., resulting in a "T" shaped storage space. A total of 29 new T-hangars over a year 2000 inventory 52 were projected for year 2020. This need will likely increase between 2020 and 2035. The airport was also recommended for upgrades to the existing weather reporting system. There are no plans to increase the runway lengths or add new runways within the 2020 planning horizon of the VATSPU. The airport is expected to support the continued growth of the Winchester City/Frederick County area adequately.

Future Goods Movement

The I-81 Corridor Improvement Study determined that heavy vehicle traffic along the I-81 corridor has historically been growing at a faster rate than passenger vehicle traffic, and that this trend will continue into the future. An average annual growth rate of 2.7 percent was identified in this study for the Win-Fred MPO region, compared with an average annual growth rate of 2.1 percent for passenger vehicles. This indicates that, at least along I-81, heavy vehicles will grow faster and represent a larger share of total traffic by 2035. The impact of this growth will be felt on I-81, in the vicinity of the I-81 interchanges and on connecting primary arterials.

2 *Virginia Air Transportation System Plan Update – 2003 Technical Report*, Virginia Department of Aviation.

Since the Win-Fred MPO is located along the I-81 corridor and within five miles of the Front Royal Inland Port, the growth of goods movement in rail freight or truck freight may have an effect on the transportation network over the next 25 years. Currently, VDOT is conducting a Tier 1 Environmental Impact Study (The I-81 Corridor Improvement Study) looking at the relationship and tradeoffs between future rail investments by Norfolk Southern (NS) railroad and future roadway improvements on I-81 statewide.

The I-81 Corridor Improvement Study is developing projections of future year 2035 freight growth in the I-81 corridor, including the development of truck trip tables, and 2035 rail freight growth on the NS rail lines between Lynchburg, Manassas, and the Front Royal Inland Port. Increased rail freight would result in a reduced growth of through truck traffic on I-81 and could lead to increased truck freight movements between the Inland Port and the Win-Fred MPO region along the U.S. 522 corridor. Increased local truck freight could lead to increased traffic congestion on I-81 on both the mainline and at the interchanges.

Chapter 6 MPO Vision Plan

The MPO Vision Plan is a needs-based plan to address existing and projected future traffic congestion. This plan should be developed following the overall 2035 Transportation plan goals and objectives, and the plan needs to be multi-modal. The component projects have been identified to address existing and future congestion identified during the No-Build process. This chapter describes how the Vision Plan was developed, the development and future testing of Vision Plan alternatives, and the final selection of the MPO Vision Plan. While this update includes a list of Vision Plan projects that has been adopted by the MPO policy board, scenario modeling has been limited to only the CLRP Candidate projects for 2035. A future MPO UPWP work program task will include modeling and analysis of the entire Vision Plan network and / or subset scenarios of the vision plan.

Development of Vision Plan

A vision plan does not begin and end with the current transportation plan; it is the by-product of the "three-C" (comprehensive, continuous and coordinated) planning process. As a result, many of the projects that were identified in the 2035 Vision Plan are projects that have been under consideration for years. In acknowledgement of this, the first step in developing a vision plan is to conduct an assessment of transportation improvements that are already actively being planned or that have been considered in the past, and determine the extent to which they contribute to reducing congestion and meeting the goals and objectives of the 2035 Transportation Plan.

Previous Plans

Many of the 2035 Vision projects were included in both the 1998 Winchester Area Transportation Plan (WATS) and the 2005 MPO's 2030 Long Range Transportation Plan. Some of these improvements have already been constructed, some are still actively in planning or being re-evaluated, and some have been removed from consideration.

Comprehensive Plans of Member Jurisdictions

In order to maximize coordination and consider the relationships between transportation and land use, the development of an MPO transportation plan must be respectful of the planning efforts of each its members. As such, the transportation elements of the Comprehensive Plans of the City of Winchester, the Town of Stephens City, and Frederick County have been considered in the update to this plan.

I-81 Corridor History

I-81 was completed in 1971 and traffic has nearly tripled since 1978. Between 1996 and 1998, VDOT conducted a review of the entire 325-mile corridor by dividing it into 10 study segments. The studies known as PE Studies (preliminary engineering studies) evaluated safety, traffic operations and geometric conditions; forecasted traffic demands; and identified preliminary improvements. In January 2002, a consortium of design and construction firms known as STAR Solutions submitted an unsolicited proposal to VDOT, under the Commonwealth's Public-Private Transportation Act (PPTA), to upgrade the I-81 corridor. The PPTA process, which is the result of state legislation passed in 1995, allows VDOT to partner with the private sector to improve transportation infrastructure. VDOT issued a request for proposals for the I-81 Corridor Improvement Study, the end product was a Tier 1 Environmental Impact Statement in conjunction with regulations outlined in the National Environment Policy Act (NEPA) viewed online here: http://www.virginiadot.org/projects/constSTAN-I-81-FEIS.asp .

The City of Winchester and Frederick County have both clearly expressed their vision for future improvements along the I-81 corridor. During the I-81 Tier 1 study, the views of the Winchester City Council and the Frederick County Board of Supervisors were clearly expressed in their proclamations, which are included in the Appendix to this report.

In a letter dated October 3, 2003, the City of Winchester provided feedback to the VDOT on two potential I-81 improvement plans being considered as part of a PPTA. The City Council reiterated in this letter their previous proclamation dated May 8, 2001 and jointly adopted by the Frederick County Board of Supervisors, dated May 11, 2001.

The 2001 proclamation requested that the following improvements be incorporated into future I-81 improvements:

- Improvements to existing I-81 interchanges at Exits 313 and 315
- New Interchange at Battaile Drive
- Collector-distributor roads on I-81 adjacent to the City limits

Vision Plan Process

The development and selection of the MPO's Vision Plan involved significant efforts on the part of the MPO committees to identify candidate projects, select a finite number of alternatives, review traffic forecasts, and select a final Vision Plan. The draft Vision Plan for this plan update was adopted by the Win-Fred MPO Policy Board on September 21, 2011.

Vision Plan Projects

A detailed listing of potential transportation improvements was developed during the Vision Planning process. More than 100 projects were identified, including improvements to existing roads, new roadway construction, and non-highway investments. These final Vision Plan projects are summarized in **Tables 6-1** and **6-2** below. These projects include new traffic signals, roadway widening, new transit routes, new roadway construction, and new interchanges.

Alternatives Analysis of Vision Plan

While Vision Plan project scenarios were analyzed in the 2030 plan, a full vision plan analysis was not included in the 2035 plan update, only the CLRP 2035 Build-Network and the 2035 No-Build Scenarios were modeled and compared to the base year. Additional future scenarios for analysis will be developed by the MPO technical committee and approved by the MPO policy board and included as work items in future Win-Fred MPO Unified Planning Work Programs. Specific projects for future scenario analysis should be pulled from the adopted Vision Plan list of projects.

Table 6-1: WinFred MPO 2035 LRTP Vision Plan Projects

Road Name	Map Project ID #	Map Quadrant	Roadway Section	Vision Plan Improvement	Estimated Cost
I-81	1	S	Mile Post 305-307	Widen I-81 to 6 lanes	$ 18,348,000
	2	SE, S & W	Exit 310 (Route 37)	Widen I-81 to 6-lane section transitioning to Project #3 (Mile Post 310-313)	$ 32,109,000
	3	SE, E & W	Exit 310-313 (Route 37; US 17/50/522)	Widen I-81 with 2-lane CD roads in both directions	$ 27,522,000
	4	SE, E & W	Interchange at Exit 311/Battaile Drive Interchange on I-81	New Interchange. Project also includes: Removing existing bridge over I-81 (Papermill), Extending Battaile to new Interchange and Papermill Road, Widening existing portion of Battaile Drive to 4-lanes, and extending and widening Pleasant Valley to 4-lanes between Cedarmeade and Battaile.	$ 75,000,000
	5	E	Mile Post 313-317	Widen I-81 to 6 lanes and widen Senseny Road and Woodstock Lane Bridges over I-81	$ 44,193,600
	6	E & N	Mile Post 317 – 319	Widen I-81 to 6 lanes	$ 17,263,800
	7	N	Mile Post 319-321	Widen I-81 to 6 lanes	$ 27,021,600
	8	N	Mile Post 321-324	Widen I-81 to 6 lanes and widen Cedar Hill Road bridge over I-81	$ 21,465,000
CLRP Candidate	9	S	Interchange at Exit 307 (Route 277)	Relocate Existing Interchange to the south	$ 90,382,500
CLRP Candidate	10	SE,S & W	Interchange at Exit 310 (Route 37S/642)	Construct Full Cloverleaf Interchange with C-D roads	$ 45,000,000

Table 6-1 (Continued): WinFred MPO 2035 LRTP Vision Plan Projects

Road Name	Map Project ID #	Map Quadrant	Roadway Section	Vision Plan Improvement	Estimated Cost
CLRP Candidate	11	SE, E & W	Interchange at Exit 313 (US 17/50/522)	Improve Interchange. Project includes replacing existing bridge over I-81	$ 41,715,000
	12	E	Interchange at Exit 315 (Route 7)	Improve Interchange	$ 41,715,000
	13	E & N	Interchange at Exit 317 (US 11)	Improve Interchange including Ramp Relocation and add C-D roads between Exit 317 and new Exit 318	$ 49,221,000
	14	E & N	Interchange at Exit 318	Construct Full Cloverleaf Interchange with C-D roads to accommodate Route 37	$ 13,700,000
	15	N	Interchange at Exit 321 (Route 672)	Replace 2 lane bridge and relocate Waverly Rd	$ 10,206,000
	16	N	Interchange at Exit 323 (Route 669)	Turn lane improvements	$ 1,836,000
US 11	17	SE, S & W	Tasker Rd Flyover Intersection with Route 11 to Route 37	Widen to 4-lane divided cross section	$ -
	18	SE & W	Rt 37 to South of City Limits	Widen to 4-lane divided cross section with LT Lanes - Widen to four lane bridge	$ 24,412,050
CLRP Candidate	19	SE & W	US 11 at South City Limits to Middle Road	Improve drainage near Tevis, add curb & gutter and sidewalks to entire section	$ 5,500,000
	20	E & N	Martinsburg Pike Junction with Route 37 (existing junction)	Improvements to Off Ramp	$ 70,000,000

Table 6-1 (Continued): WinFred MPO 2035 LRTP Vision Plan Projects

Road Name	Map Project ID #	Map Quadrant	Roadway Section	Vision Plan Improvement	Estimated Cost
	21	E & N	Martinsburg Pike - Route 37 Junction to I-81	Widen to 6-lane divided cross section	$ 36,209,250
Modified from Project #23	22	N	I-81 to Old Charles Town Rd (Route 761)	Widen to 6-lane divided cross section	$ 115,869,600
	23	E & N	Old Charles Town Rd to West Virginia Line	Widen to 4-lane divided cross section	$ 50,851,125
	24	SE, S & W	Interchange improvements to South US 11/Route 37 Interchange	Intersection and Through Lane Upgrades, Ramp Modifications	$ 70,000,000
	25	SE & W	US 11 South at Opequon Church Lane and Shawnee Drive	Intersection Improvements and Access Management	$ 10,665,000
	26	E & W	Entire Section of US 11	Access Management Improvements - Placeholder should funding or grant opportunities become available	$ -
	27	N	Hopewell Rd and Brucetown Rd (Route 672)	Align Intersections	$ 16,042,500
US Route 17/50	28	SE & E	Entire Eastern Section of US 17/50	Access Management and Safety Improvements - Placeholder should funding or grant opportunities become available	$ -

Table 6-1 (Continued): WinFred MPO 2035 LRTP Vision Plan Projects

Road Name	Map Project ID #	Map Quadrant	Roadway Section	Vision Plan Improvement	Estimated Cost
	29	SE & E	Carpers Valley Road to Sulphur Springs Road	Widen to be determined by model - R6D	$ 21,286,800
	30	SE & E	Sulphur Springs Road to Relocated US 522	Widen to be determined by model - R6D	$ -
	31	SE, E & W	Relocated US 522 to I-81	Widen to be determined by model - R6D	$ -
	32	E & W	I-81 to Apple Blossom Drive	Realign Apple Blossom Drive to intersect with University Drive at traffic signal. Close existing portion of Millwood, add right turn lane on Jubal Early at Apple Blossom, and add new signal on Apple Blossom - Funding from private sources	$ 1,700,000
US 50	33	E	Entire Western Section of US 17/50	Access Management and Safety Improvements- Placeholder should funding or grant opportunities become available	$ -
	34	W	Amherst Street between Keating Drive & Route 37	Widen to 6-lane cross section	$ 28,472,400
	35		US 50 Between Rt 37 and Poor House Road	Widen to be determined by model	$ -

Table 6-1 (Continued): WinFred MPO 2035 LRTP Vision Plan Projects

Road Name	Map Project ID #	Map Quadrant	Roadway Section	Vision Plan Improvement	Estimated Cost
Route 37	36	SE, S & W	Interchange with Route 651 (Shady Elm Road)	New Interchange	$ 48,667,500
	37	E	Interchange with Cedar Creek Grade	Improve Interchange - SBL, Signal, Add extra LTL	$ 55,620,000
	38	W	Interchange with West Jubal Early Drive	New Interchange	$ 48,667,500
	39	W	Interchange with US 50	Improve Interchange	$ 55,620,000
Route 277	40	SE & S	I-81 to Double Church Rd (Route 641)	Widen to Urban 4-lane divided cross section	$ 7,065,630
	41	SE & S	Double Church Rd (Route 641) to White Oak Road (Route 636)	Widen to Urban 4-lane divided cross section	$ 14,987,700
	42	SE	White Oak Road to US US 522/US 340	Widen to R6D 4-lane divided cross section	$ 24,622,650
FY2012-2017 SYIP/TIP Project	43	SE & S	Entire County Section of Route 277	Access Management and Safety Improvements - Refer to VDOT STARS Solutions Study	$ -
	44	SE	Extension of Route 277 and US 522	Extension of existing route approximately 1.75 miles west to new intersection with US 522 approximately 1.25 miles north	$ 40,459,500

Table 6-1 (Continued): WinFred MPO 2035 LRTP Vision Plan Projects

Road Name	Map Project ID #	Map Quadrant	Roadway Section	Vision Plan Improvement	Estimated Cost
Cedar Creek Grade (Route 622)	45	SE & W	Rt 37 to Winchester City Boundary	Widen to U4D 4-lane cross section	$ 10,170,225
	46		Interchange with Route 37	Install traffic signals	$ 346,500
	47	SE, E & W	Airport Road to US 17/50	Relocate US 522 to the east. Existing US 522 to be closed at northern end to serve local traffic only.	$ 6,674,400
	48	E & W	Fairmont St. to 0.2 miles north of Winchester CL	Widen to U4D 4-lane cross section	$ 6,189,075
Route 641 (Double Church Road)	49	SE & S	Warren Co Line to Route 277	Upgrade existing two-lane road	$ 25,042,500
Modified from Project #49	50	SE & S	Route 277 to South Frederick Parkway	Improve road to South Frederick Parkway - U4D	$ 25,042,500
Roue 642 (Tasker Road)	51	SE	US 522 to Lakeside Drive	Widen to U4D 4-lane cross section	$ 19,901,700
	52	SE, S & W	Vicinity of Route 37	Crosspoint Improvements - Realignment and potential proffered	$ 1,000,000
	53	SE, S & W	Route 37 to Papermill Road (Route 644)	Extension from North of Route 37 - U4D	$ 21,045,150
Route 651 (Shady Elm Road)	54	SE & W	Apple Valley Road (Route 652) to Stephens City Bypass	Widen to 4 lane cross section and expanding intersection	$ 54,598,050

Table 6-1 (Continued): WinFred MPO 2035 LRTP Vision Plan Projects

Road Name	Map Project ID #	Map Quadrant	Roadway Section	Vision Plan Improvement	Estimated Cost
Route 652 (Apple Valley Road)	55	SE & W	US 11 to Shady Elm Rd (Route 651)	Widen to Urban 4-lane cross section with Turn Lanes	$ 4,403,430
Modified from Project #55	56	SE & W	Shady Elm Rd (Route 651) to Middle Road	Roadway Improvements with Turn Lanes - R3	$ 9,705,015
Shawnee Drive	57	SE & W	Battaile Drive to US 11	Widen to 4-lane cross section	$ 10,491,390
Greenwood Road (Route 656)	58	E	Senseny Road to Valley Mill Road - widening to be determined by model	Widen to 2-lane upgrade with Turn lanes from Senseny Road approximately .93 miles south	$ 7,506,000
Sulphur Springs Road (Route 655)	59	SE & E	US 17/50 to future Channing Drive Intersection	Turn lane improvements at the intersection 2 lane with paved shoulders, an upgrade of the existing	$ 7,506,000
Weems Lane	60	SE & W	Roosevelt Blvd to US 11	Widen to 4-lane section with LT lanes at intersections. Drainage improvements, add curb and gutter and sidewalks, turn lanes at intersections	$ 2,000,000
Hope Drive/Tevis Street Extension - CLRP Candidate	61	SE & W	Valley Avenue (Route 11) to US 522	Construct Urban 4-lane arterial connection between US 11 and US 522. Project includes Tevis Street extension over I-81 to include new bridge over I-81 and realignment of Papermill and Tevis at RR tracks in the City	$ 27,000,000
White Oak Road	62	SE & S	US 522 to Tasker Road	Widen to Urban 4-lane cross section	$ 27,820,000

Table 6-1 (Continued): WinFred MPO 2035 LRTP Vision Plan Projects

Road Name	Map Project ID #	Map Quadrant	Roadway Section	Vision Plan Improvement	Estimated Cost
Old Charles Town Road	63	E & N	US 11 to New Stephenson Village Boulevard	Improve existing roadway	$ 9,007,200
Jordan Springs Road	64	E & N	Old Charles Town Road to Woods Mill Road	Improve existing Rural 2-lane road	$ 9,007,200
Woods Mill Road	65	E & N	Jordan Springs Road to Route 7	Improve existing Rural 2-lane road	$ 15,762,600
Channing Drive	66	E	Senseny Road to Valley Mill Road	Widen to Urban 4-lane cross section	$ 25,760,000
Inverlee Way	67	SE & E	Route 17/50 to Taggert Drive	Widen existing to Urban 4-lane cross section	$ 12,107,200
Warrior Drive - CLRP Candidate	68	SE & S	Route 277 to Opequon Creek (north of Route 642)	Widen to Urban 4-lane cross section	$ 38,640,000
Route 7	69	E	Clarke County line to I-81	Widen to 6-lane cross section	$ 89,931,600
	70	E	Entire Route 7 Corridor	Access Management and Safety Improvements - Placeholder should funding or grant opportunities become available	$ -
Fairfax Street	71	S	Main Street/Route 11	Upgrades to existing section including widening, curb, gutter and sidewalks	$ 6,581,250
	72	S	Stephens City Western Bypass to Route 11	On-street parking, curb, gutter and sidewalk	$ 8,220,000

Table 6-1 (Continued): WinFred MPO 2035 LRTP Vision Plan Projects

Road Name	Map Project ID #	Map Quadrant	Roadway Section	Vision Plan Improvement	Estimated Cost
Redbud Road	73	E & N	Redbud Road Connection	Disconnect from Route 11 and Realign to Meet Snowden Bridge Blvd	$ 4,169,550
South Frederick Parkway Modified from Project #44	74	SE	South Frederick Parkway at Intersection of Route 277 and Route 522	Relocation of Exit 307 to Route 277 - From relocated Exit 307 to existing intersection 277/522. Make Parkway	$ 11,598,390
Modified from Project #44	75	SE	South Frederick Parkway between 277 Extension to US 522 and existing Route 277	Create connector road from existing Route 277	$ 13,486,500
Hudson Hollow Road Modified from Project #50	76	SE & S	Route 277 to South Frederick Parkway	Improve and realign to South Frederick Parkway	$ 7,647,750
Airport Road Modified from Project #47	77	SE, E & W	US 522 to Victory Lane	Widen/Improve existing roadway	$ 20,935,200
Route 37 - New Construction Projects - CLRP Candidate	78	E	I-81 @ Crosspointe to US 522	Construct limited access divided highway	$ 31,312,000
	79	E	US 522 to Routes 17/50	Construct limited access divided highway	$ 28,551,600
	80	SE & E	US 17/50 to Route 7	Construct limited access divided highway	$ 44,496,000

Table 6-1 (Continued): WinFred MPO 2035 LRTP Vision Plan Projects

Road Name	Map Project ID #	Map Quadrant	Roadway Section	Vision Plan Improvement	Estimated Cost
	81	E	Route 7 to I-81 at MP 318	Construct limited access divided highway	$ 55,620,000
	82	E & N	I-81 at MP 318 to Route 37 (west of industrial park)	Construct limited access divided highway	$ 61,182,000
CLRP Candidate	83	SE & S	Route 37 @ Warrior Drive	Construct interchange	$ 59,482,500
CLRP Candidate	84	SE	Route 37 @ US 522	Construct interchange	$ 59,482,500
	85	SE & E	Route 37 @ US 17/50	Construct interchange	$ 59,482,500
	86	E	Route 37 @ Senseny Road	Construct interchange	$ 59,482,500
	87	E	Route 37 @ Route 7	Construct interchange	$ 59,482,500
	88	E & N	Route 37 @ Snowden Bridge	Construct Interchange	$ 59,482,500
Warrior Drive	89	SE & S	Opequon Creek to Papermill Rd	Construct 4-lane Urban cross section	$ 33,488,000
	90	SE. E & W	Papermill Rd to E Tevis Street	Construct 4-lane cross section	$ 8,847,300
Modified from Project #44	91	SE & S	Route 277 to South Frederick Parkway - Connection between existing 277 and the South Frederick Parkway	Extend and Widen to 4-lane cross section	$ -

Table 6-1 (Continued): WinFred MPO 2035 LRTP Vision Plan Projects

Road Name	Map Project ID #	Map Quadrant	Roadway Section	Vision Plan Improvement	Estimated Cost
Airport Road Extension	92	SE & S	US 522 to Warrior Drive	Construct 4-lane cross section	$ 4,679,400
Relocation of Papermill Road	93	SE. E & W	West of US 522	Relocate to south opposite new school entrance/Victory Blvd Extension	$ 10,432,800
Jubal Early Drive Extension	94	W	Existing West Jubal Early Drive to Route 37	Construct 4-lane cross section	$ 85,412,250
Brooke Road Extension	95	E & N	US 11 to US 522	Construct 4-lane cross section	$ 15,456,000
Route 642 (Tasker Road) Extension	96	SE & S	Existing Route 642 to US 11	Construct 4-lane cross section	$ 19,605,960
	97	SE & S	US 11 to Stephens City Bypass	Construct 4-lane cross section	$ 8,694,000
Route 644 Extension (Parkins Mill Rd)	98	SE & S	US 522 to Lakeside Drive	Construct 2-lane cross section - Determine bridge called for and add as necessary	$ 7,430,940
Aylor Road (Route 647) Realignment	99	S	Relocate intersection with Route 277 to the east	Construct 3-lane cross section	$ 5,825,250
Stephens City Bypass	100	S	Relocated I-81 Exit 307 Interchange to US 11 South	Construct 4-lane cross section	$ 50,754,060
	101	S	US 11 South to Fairfax	Construct 4-lane cross section plus bridge	$ 22,604,400

Table 6-1 (Continued): WinFred MPO 2035 LRTP Vision Plan Projects

Road Name	Map Project ID #	Map Quadrant	Roadway Section	Vision Plan Improvement	Estimated Cost
			Street (Route 631)	over US 11	
	102	S	Fairfax Street (Route 631) to Shady Elm Road (Route 651)	Construct 4-lane cross section	$ 34,776,000
East/West Connector Roads (US 11) Modified from Project #101	103	S	US 11 South to Stephens City Bypass	Construct 2-lane cross section	$ 4,503,600
Modified from Project #102	104	S	US 11 South to Stephens City Bypass	Construct 2-lane cross section	$ -
Meadow Branch Avenue	105	W	Extension to US 50	Construct 4-lane cross section	$ 4,000,000
Victory Road	106	SE & E	Airport Road to Justice Drive	Construct 4-lane Urban cross section	$ 19,126,800
Legge Boulevard	107	SE, E & W	Patsy Cline Blvd to Frontage Road	Construct 3-lane Urban cross section	$ 4,758,000
Renaissance Drive	108	SE & S	US 11 to Route 651	Construct 2-lane U4D cross section	$ 5,404,320
Snowden Bridge Boulevard	109	E	Old Charles Town Road to US 11	Construct 4-lane Urban cross section	$ 8,867,880
Willow Run Drive	110	W	Jubal Early Drive to Cedar Creek Grade	Construct 4-lane cross section	$ 25,746,600

Table 6-1 (Continued): WinFred MPO 2035 LRTP Vision Plan Projects

Road Name	Map Project ID #	Map Quadrant	Roadway Section	Vision Plan Improvement	Estimated Cost
Route 7-Senseny Road Connector	111	E	Route 7 to Senseny Road (Spine Road)	Construct 4-lane cross section	$ 29,559,600
Stonewall Industrial Park Connector	112	E & N	Lenoir Drive to Route 37	Construct Rural one-lane, one-way SB roadway	$ 1,251,450
Botanical Road	113	E	US 522	Extension - U3	$ -
Fort Collier Road	114	E & N	Brick Kiln Road	Relocate Intersection	$ 8,568,000
Channing Drive	115	SE & E	Senseny Road to Sulphur Springs Rd	Extension	$ 23,377,200
	116	SE & E	Sulphur Springs Road to US 50	Extension	$ 13,910,400
Inverlee Way	117	E	Taggert Rd to Senseny Rd	Extension - U4D	$ 18,505,400
Taft Avenue	118	SE & W	Valley Avenue	New alignment to Middle Road	$ 3,364,000
	119	SE & W	Weems Lane to Hope Drive	North/South Extension to New Roundabout Intersection	$ 3,753,000
Western Bypass	120	S	US 11 to Shady Elm Rd (Route 651) - Stephens City Bypass	Construct 4-lane cross section	$ 81,348,300
S. Loudoun	121	E& W	At Featherbed Lane	Drainage Improvements on Abrams Creek	$ 2,500,000
Tasker Road Flyover	122	SE, S & W	Existing Tasker Road to US 11	New roadway connection with bridge over I-81	$ 12,000,000

Table 6-1 (Continued): WinFred MPO 2035 LRTP Vision Plan Projects

Road Name	Map Project ID #	Map Quadrant	Roadway Section	Vision Plan Improvement	Estimated Cost
I-81 Winchester Rest Area Design Build	123		Winchester Rest Area Design Build	Winchester Rest Area Design Build Construction Project	$ 203,000
Route 7 at First Woods Drive	124		Route 7 at First Woods Drive	Modify signal at Route 7 and First Woods Drive	$ 18,000
Route 7 at Morgans Mill Road	125		Route 7 at First Woods Drive	Close median crossover on Route 7 at Morgans Mill Road	$ 57,000
Route 7 at I-81	126		Route 7 at I-81	Modify signal, Extend left turn lane, construct curb & gutter	$ 628,000
Routes 7 and 991	127		US 17/50 to Route 7	Widen west bound right turn lane at Route 7 and State Route 991	$ 27,000
Intersection of Route 11 and Route 672	128		Intersection of US 11 and Route 672	Install traffic signals at intersection	$ 263,000
	129		Increase street capacity and pavement overlay	Increase street capacity and pavement overlay	$ 797,000
Route 277	130		Route 277	Install object markers, widen pave and retime signal	$ 36,000
US 522, Frederick County	131		US 522	US 522 Bridge Replacement (STR ID 08156)	$ 1,522,000
US 522	132		US 522	US 522 construct left turn lane	$ 39,000
US 522 and Fox Drive North	133		US 522 at Fox Drive North	Upgrade traffic signal	$ 280,000
Route 522 and	134		US 522 at Fox Drive	Upgrade traffic signal	$ 280,000

Table 6-1 (Continued): WinFred MPO 2035 LRTP Vision Plan Projects

Road Name	Map Project ID #	Map Quadrant	Roadway Section	Vision Plan Improvement	Estimated Cost
Fox Drive North			South		
US 522	135		US 522	Extend left turn lanes and pavement patching	$ 109,000
Routes 623 and 6908	136		Routes 623 and 6908	Replace bridge over Cedar Creek	$ 1,734,000
Valley Mill Road at Route 7	137		Valley Mill Road at Route 7	Improve alignment at Valley Mill Road at Route 7	$ 2,000,000
Route 723 (Carpers Valley Road)	138		Route 723 (Carpers Valley Road) over Opequon Creek	Route 723 (Carpers Valley Road) over Opequon Creek	$ 1,745,000
Abrams Creek	139		Abrams Creek	Improve drainage along Abrams Creek	$ 2,000,000
Route 37	140		Route 37 between US 50 & US 11N	Operational & safety improvements	
Monticello Ave **CLRP Project**	141		Valley Ave. to Battaile Drive	Widen existing 2-lane Monticelle Ave and extend east to Battaile Dr. including bridge over CSX RR	$ 5,000,000

Table 6-2: **Plan Projects – Travel Demand Management Projects**

Project Type	Planned Improvement
Park and Ride Facilities	
	US 522 near Tasker Road
	Route 7 Between I-81 and Clarke County Line
Public Transit	
	Extend Transit Service into Frederick County (2 routes)
	Improve Transit Dependability (Frequency, Amenities, Reliability, Info)
	Improve Express Bus Service to the Washington, DC Region
	Future Passenger Rail Service along I-81 Corridor
Access Management	
	Develop Access Management Plan for Route 7
	Develop Access Management Plan for US 17/50
	Develop Access Management Plan for US 522
	Develop Access Management Plan for US 11
	Develop Access Management Plan for Pleasant Valley Road Corridor
Travel Demand Management & Telecommuting	
	Flexible Work Hours
Air Quality Improvement/Congestion Management	
	Consider potential improvements if EPA Deferral is rescinded after 2007
	Ozone Alert days
	Car pooling
	Traffic signal synchronization
	Electric Hookups at Truck stops to reduce idling

Selection of MPO Vision Plan

The Win-Fred MPO Policy Board endorsed a draft list of Vision Plan Projects on February 24, 2010 and selected a final Vision Plan on and a Constrained list of Projects on September 21, 2011. Vision plan projects are shown in **Figure 6-1**. The project numbers shown in **Figures 6-1 to 6-5** and are described in **Tables 6-1** and **6-2**.

2035 WinFred MPO East LRTP Vision Plan Project Map

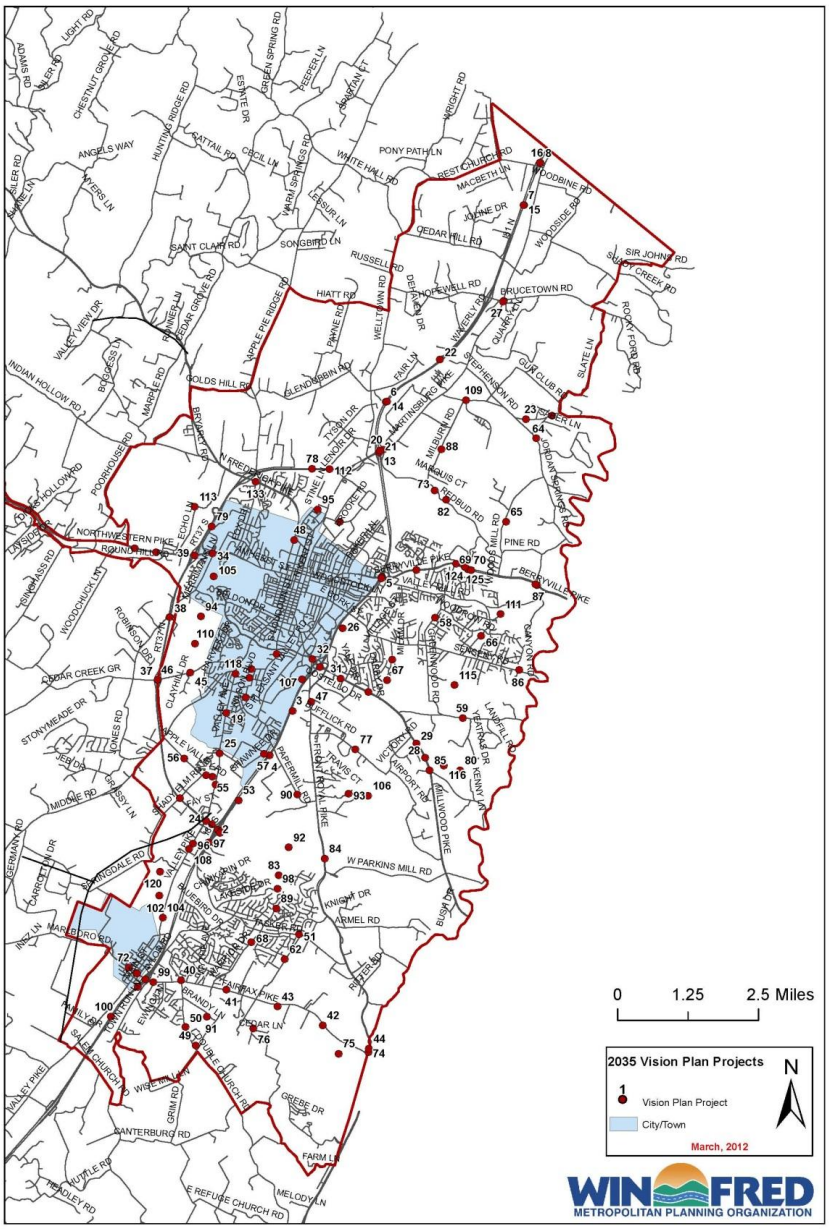


Figure 6-1: Win-Fred MPO East 2035 LRTP Vision Plan Map

2035 WinFred MPO North LRTP Vision Plan Project Map

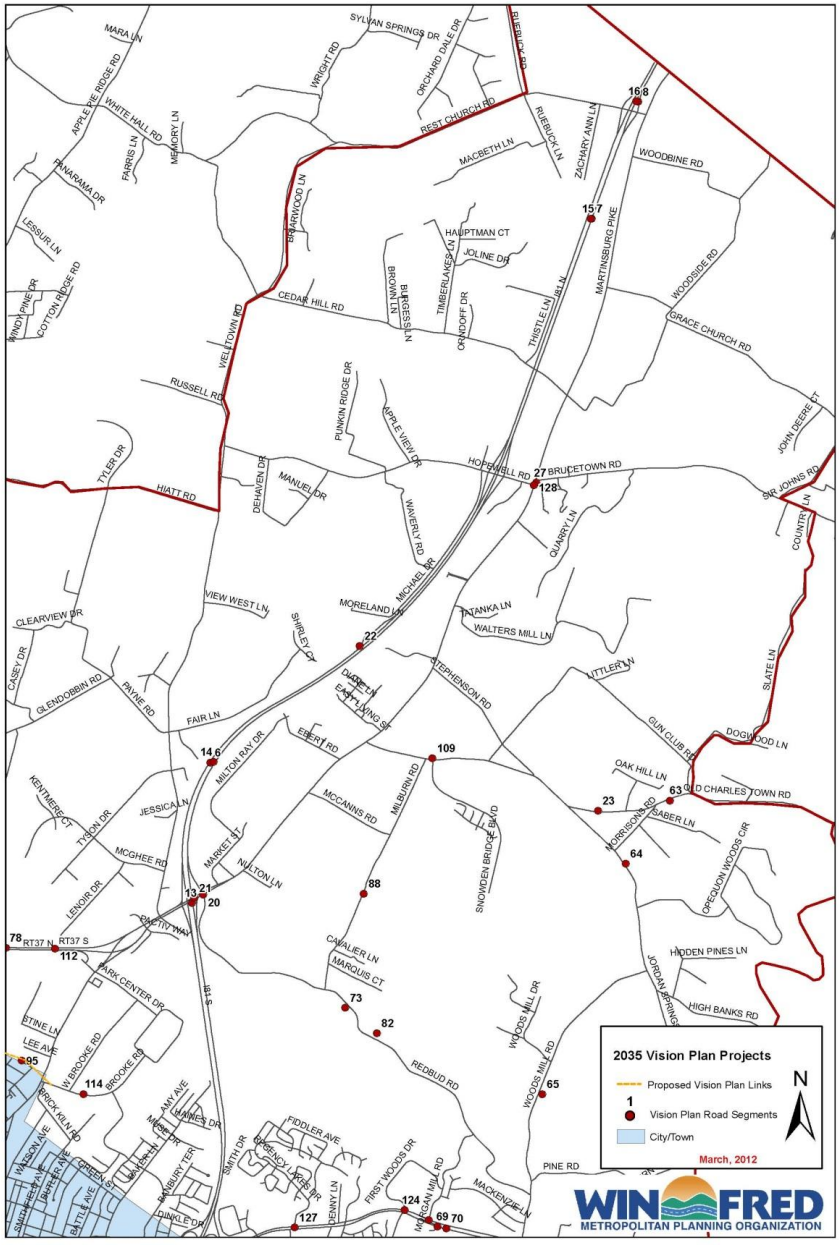


Figure 6-2: Win-Fred MPO North 2035 LRTP Vision Plan Map

2035 WinFred MPO Southeast LRTP Vision Plan Project Map

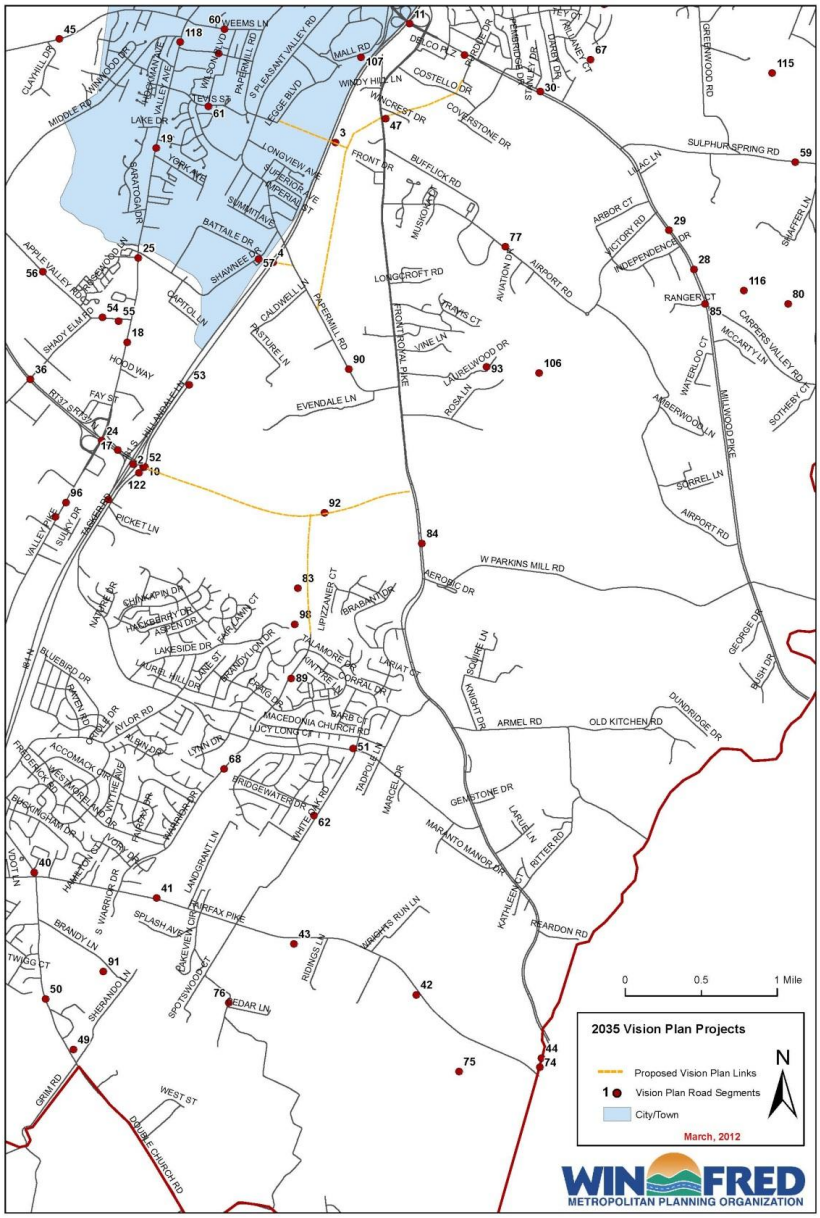


Figure 6-3: Win-Fred MPO Southeast 2035 LRTP Vision Plan Map

2035 WinFred MPO South LRTP Vision Plan Project Map

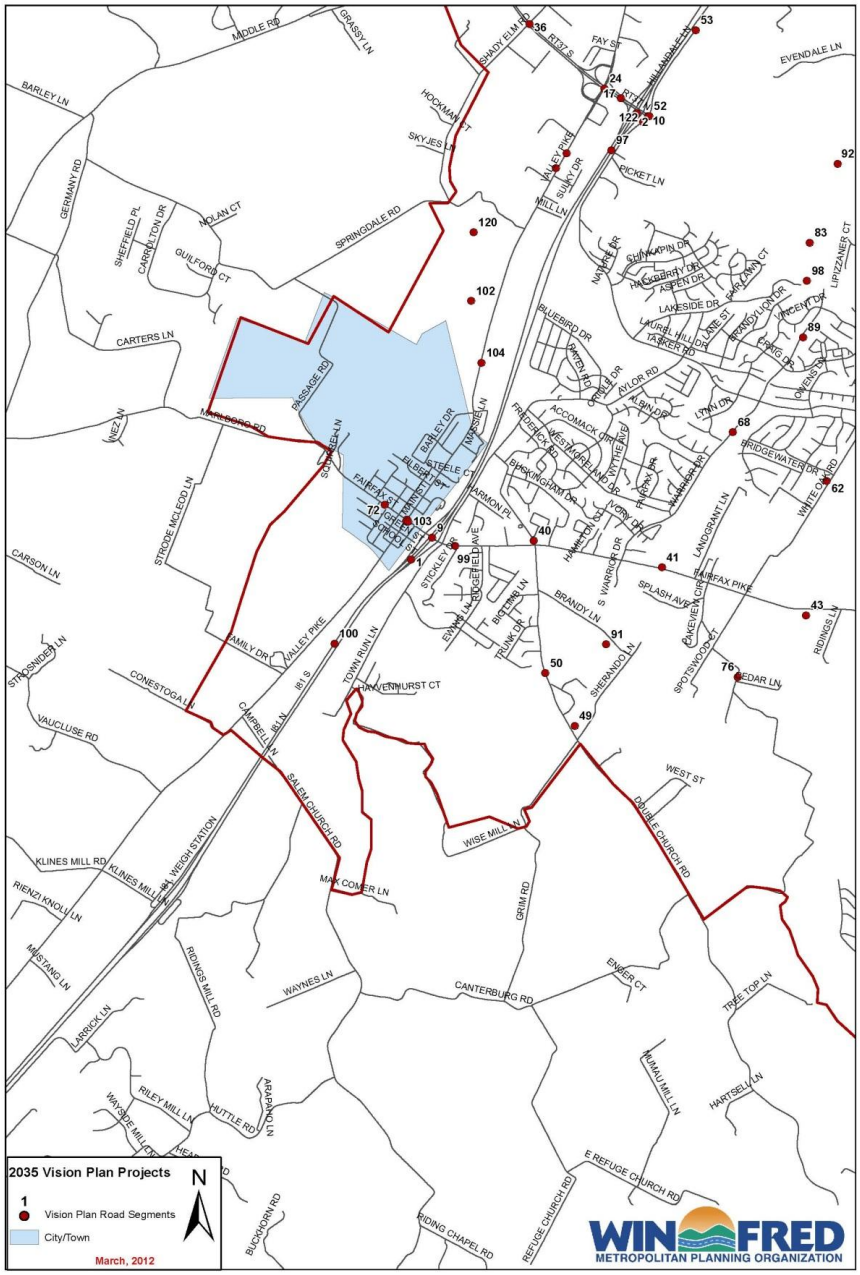


Figure 6-4: Win-Fred MPO South 2035 LRTP Vision Plan Map

2035 WinFred MPO West LRTP Vision Plan Project Map

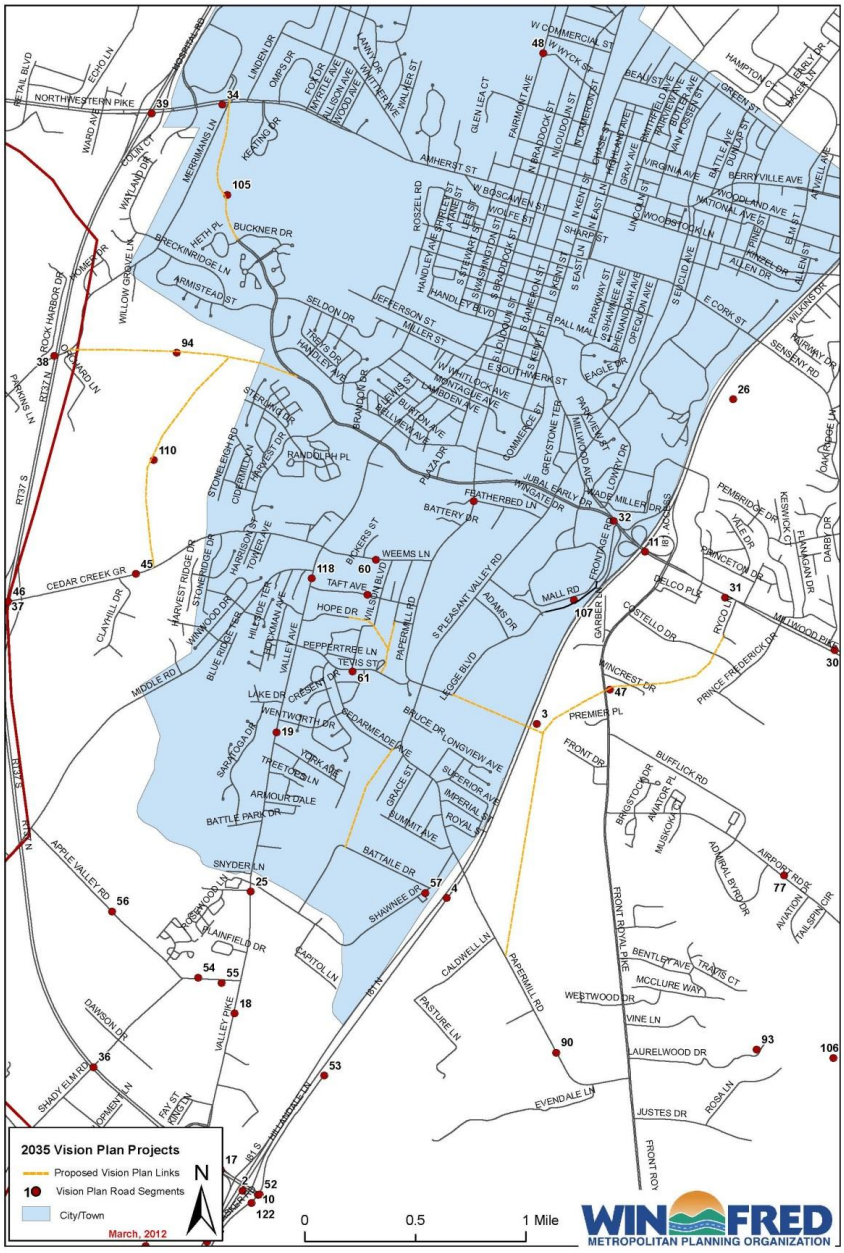


Figure 6-6: Win-Fred MPO West 2035 LRTP Vision Plan Map

Chapter 7 MPO Constrained Long Range Plan (CLRP)

Fiscal constraint for long-range transportation plans is mandated by federal law (23 U.S.C. § 134 and 23 C.F.R. Part 450). Federal conformity also mandates that transportation plans be fiscally constrained consistent with USDOT's metropolitan planning regulations (23 C.F.R. Part 450) and EPA's conformity regulations (40 C.F.R. § 93.108). A constrained long-range plan (CLRP) responds to federal requirements that funding sources be identified for all strategies and projects included in long-range plans. Updated at least every five 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."

CLRP Process

The Win-Fred MPO is required to adopt a long-range transportation plan by June 30, 2012. This plan must include a constrained funding plan, and it must conform to federal metropolitan planning and environmental justice requirements. As discussed in Chapter 3, the following steps are needed to finalize this plan:

1. Publish draft long-range plan and provide public review and comment period,
2. Public presentations of the draft long-range plan,
3. Review and address public comments with MPO,
4. Revise and publish final long-range plan, and
5. MPO adopts final long-range plan by June 30, 2012

The following sections provide documentation on the constrained funding plan, and conformance with federal metropolitan planning and environmental justice requirements.

Financial Constraint

Highway Funding

The Virginia Department of Transportation provided funding projections for the Win-Fred MPO based on projected revenues. As shown in **Table 7-1**, these projections are subdivided by funding category and include both maintenance and construction funding sources. It is important to note that this list does not include other unidentified potential discretionary funding sources, such as enhancement funds, congestion mitigation air quality (CMAQ) funds, other potential bond revenue, and revenue sharing funds. Full funding of the Constrained Long Range Plan projects can only be reasonably expected if all potential funding sources are pursued.

Table 7-1: Summary of Future Roadway Funding Allocations for the Win-Fred MPO

Funding Source	2010-2035 Totals	
Access & Safety	$	52,323,990
Interstate	$	11,847,588
Primary	$	10,540,133
Secondary	$	5,723,650
Urban	$	391,818
Financial Assistance to Localities	$	109,776,699
Maintenance	$	702,896,073

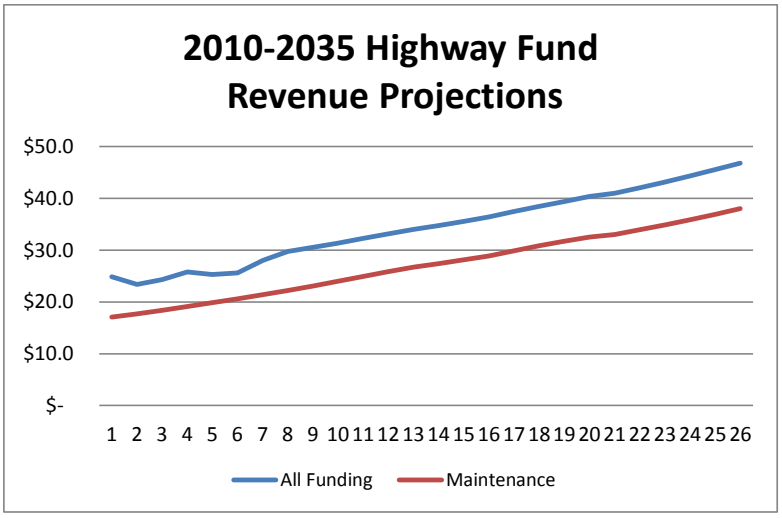


Figure 7-1: 2010-2035 Funding Trends - All Funding vs. Maintenance

Table 7-2: Detailed VDOT Roadway Funding Allocations 2010-2035

Program	Name	Locality	2010-2035
603 - Access	Bond Match	MPO	$ 19,573,684
	Bridge	MPO	$ 869,601
	BROS	MPO	$ 6,279,413
	HPP-R	MPO	$ 8,392
	HRRR	MPO	$ 29,117
	HRRR Match	MPO	$ 3,235
	Rail Highway Crossings	MPO	$ 44,668
	Rail Highway Crossings Match	MPO	$ 4,963
	SAFETEA-LU Bond Match	MPO	$ 59,670
	SAFETEA-LU State Match	MPO	$ 18,267
	Safety	MPO	$ 3,964,989
	Safety Bike Ped	MPO	$ 25,323
	Safety Match	MPO	$ 443,368
	STP Enhancement	MPO	$ 193,031
	STP Under 200,000	MPO	$ 20,757,891
	TIP	MPO	$ 48,378
603 - Interstate	Bonus OA Match- NHS	MPO	$ 49,628
	Bonus OA -NHS	MPO	$ 198,514
	Fed Interstate Maintenance	MPO	$ 1,349,987
	Federal NHS	MPO	$ 7,783,909
	HPP-F	MPO	$ 1,879
	Interstate State Match	MPO	$ 149,999
	NHS Match	MPO	$ 1,945,978
	Residue Parcels	MPO	$ 119,344
	SAFETEA-LU Bond Match	MPO	$ 248,349
603 - Primary	Bond Match	MPO	$ 2,033,270
	Bridge	MPO	$ 3,241,950
	Equity Bonus	MPO	$ 531,763
	HPP-F	MPO	$ 9,397
	HPP-R	MPO	$ 6,032
	Right of Way	MPO	$ 5,572
	SAFETEA-LU Bond Match	MPO	$ 106,861
	SAFETEA-LU State Match	MPO	$ 13,668
	STP Statewide	MPO	$ 119,014
	STP Under 200,000	MPO	$ 1,905,865
	STP Under 5,000	MPO	$ 2,382,919
	TIP	MPO	$ 183,822
603 - Secondary	Bond Match	Frederick	$ 213,442
	Bridge	Frederick	$ 416,540
	BROS	Frederick	$ 200,527
	ROW Residue Parcels	Frederick	$ 1,811
	STP Federal	Frederick	$ 509,022
	STP Federal Match	Frederick	$ 127,256
	Tele Fees	Frederick	$ 4,255,052
603 - Urban	STP Federal	Winchester	$ 313,454
	STP Federal Match	Winchester	$ 78,364
Financial Assistance to Localities	Financial Assistance to Localities	MPO	$109,776,699
Maintenance	Maintenance	MPO	$702,896,073

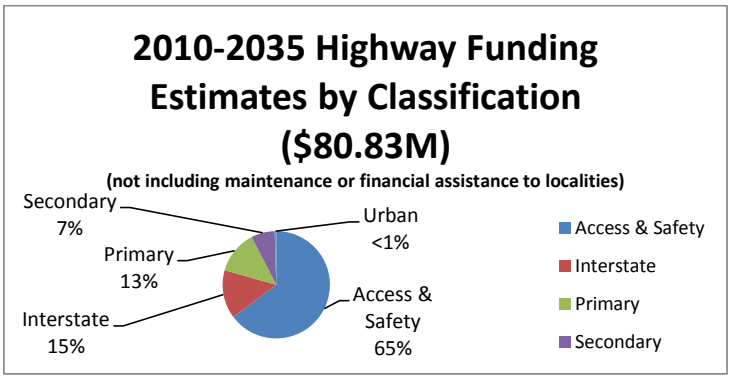


Figure 7-2: 2010-2035 Projected Funding (not including maintenance or locality funding)

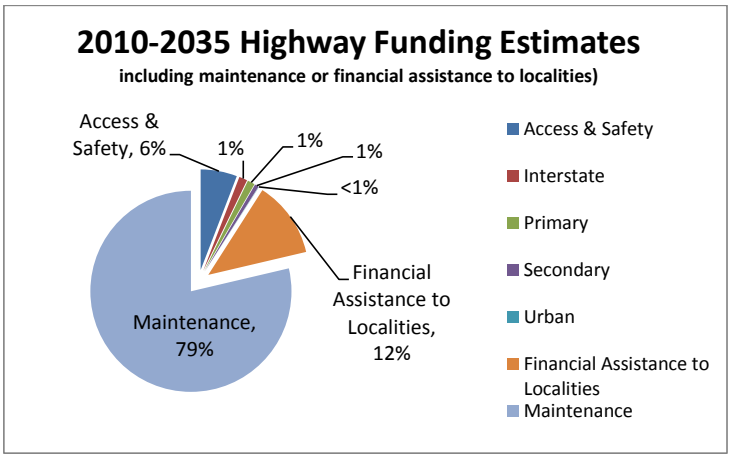


Figure 7-3: 2010-2035 Projected Funding including maintenance and locality funding

For the final Vision Plan, conceptual cost estimates were prepared using cost estimate projections prepared by the Virginia Department of Transportation (VDOT). These cost estimates are provided in the Appendix to this report. The total cost of the roadway portion of the Vision Plan is estimated to cost in excess of two billion dollars.

The projected roadway construction funds shown above in **Table 7-1** (Interstate, Primary, Secondary and Urban funds) are all significantly lower than the combined costs of the projects identified in the Vision Plan. **Table 7-3** provides a summary of the funding shortfall between the funding projections and the 2035 Vision Plan costs. Overall, only three

percent of the total roadway Vision Plan appears to have funding through 2035. The Primary funding category has the lowest future allocation and the highest project cost due to the proposed construction of the Route 37 freeway.

Table 7-3: 2035 Funding Projections, CLRP Needs & Vision Plan Costs

Funding Stream	VDOT Projected 2011-2035 Allocation	VDOT Projected 2011-2035 not including maintenance	2035 CLRP Project Costs	Unfunded / Unallocated Balance	LRTP Vision Plan Roadway Project Costs
Access & Safety	$ 52,323,990	$ 52,323,990	To be determined	$ 52,323,990	
Interstate	$ 11,847,588	$ 11,847,588	$ 177,097,500	$ (165,249,912)	
Primary	$ 10,540,133	$ 10,540,133	$ 103,370,130	$ (92,829,997)	
Secondary	$ 5,723,650	$ 5,723,650	$ 98,122,500	$ (92,398,850)	
Urban	$ 391,818	$ 391,818	$ 27,000,000	$ (26,608,182)	
Financial Assistance to Localities	$ 109,776,699	$ 109,776,699		$ 109,776,699	
Maintenance	$ 702,896,073	not available	not available	not available	
Undetermined Sources	To be determined	To be determined	To be determined	To be determined	
Total	$ 893,499,951	$ 190,603,878	$ 405,590,130	$ (214,986,252)	$ 3,066,679,590

Transit Funding

Every year, the Virginia Department Rail and Public Transportation (VDRPT) publishes a Transportation Capital Improvement Program (CIP) documenting the projected capital program for all transit systems receiving state assistance. The projections for Winchester Transit from the 2011 WinTran Transit Development Plan are shown in Tables 7-4 & 7-5. Based on the plan, Winchester Transit would expend $3.81 million dollars for capital projects over the next six years. The majority of the funding, $3.048 million would come from the federal government (80%) with the state and local governments covering the remaining 20%.

The funding is separated into 4 categories:

1. Purchase of Replacement Rolling Stock
2. Purchase of Expansion Rolling Stock
3. Construction of Facilities
4. All other Capital Expenses

Table 7-4: Six-Year Winchester Transit 2011 TDP Financial Plan for Operations

Constrained and Unconstrained Projects	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017
Current Annual Service Hours	17,422	17,422	17,422	17,422	17,422	17,422
Close Mid-day Gap on Amherst Route	128	128	128	128	128	128
Later Hours on Saturdays			624	624	624	624
Downtown Trolley Circulator			1,116	1,116	1,116	1,116
Extensions into Frederick County:						
Berryville Avenue Route			2,035	2,035	2,035	2,035
Amherst Route to Walmart			611	611	611	611
Millwood Ave/522 South			2,035	2,035	2,035	2,035
Northside East to Rutherford Crossing			2,035	2,035	2,035	2,035
Corridor Service on Route 11 to Middletown				3,132	3,132	3,132
Total Transit Service Hours	**17,550**	**17,550**	**26,006**	**29,138**	**29,138**	**29,138**
Projected Operating Expenses						
Cost Per Revenue Hour- Directly Operated Service- Inflation only	$ 48.39	$ 49.84	$ 51.33	$ 52.87	$ 54.46	$ 56.09
Cost Per Revenue Hour- Inflation and Considering Expansions, Directly Operated Service	$ 48.39	$ 49.84	$ 53.68	$ 55.03	$ 56.68	$ 58.38
Current WinTran Operating Expenses	$ 843,000	$ 868,290	$ 894,339	$ 921,169	$ 948,804	$ 977,268
Close Mid-day Gap on Amherst Route	$ 6,194	$ 6,379	$ 6,571	$ 6,768	$ 6,971	$ 7,180
Later Hours on Saturdays		$ -	$ 32,032	$ 32,993	$ 33,983	$ 35,003
Downtown Trolley Circulator			$ 57,289	$ 59,008	$ 60,778	$ 62,601
Staff Addition- Operations Manager- Salary and Fringe			$ 60,976	$ 62,805	$ 64,689	$ 66,630
Extensions into Frederick County:						
Berryville Avenue Route			$ 104,464	$ 107,598	$ 110,826	$ 114,151
Amherst Route to Walmart			$ 31,339	$ 32,280	$ 33,248	$ 34,245
Millwood Ave/522 South			$ 104,464	$ 107,598	$ 110,826	$ 114,151
Northside East to Rutherford Crossing			$ 104,464	$ 107,598	$ 110,826	$ 114,151
Corridor Service on Route 11 to Middletown				$ 165,601	$ 170,569	$ 175,686
Total Projected Operating Expenses- Constrained and Unconstrained	**$ 849,194**	**$ 874,669**	**$ 1,395,939**	**$ 1,603,419**	**$ 1,651,521**	**$ 1,701,067**

Notes: Proposed implementation years are estimated. Actual implementation is dependent upon funding availability.

Note: Frederick County Extensions not included in MPO CLRP

Table 7-4 Continued: Six-Year Winchester Transit 2011 TDP Financial Plan for Operations

Anticipated Funding Sources	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017
Federal						
FTA S. 5307	$ 374,000	$ 385,220	$ 615,647	$ 634,116	$ 653,140	$ 672,734
FTA S. 5311 to support corridor service to Middletown *	$ -			$ 82,801	$ 85,285	$ 87,843
Subtotal, Federal	$ 374,000	$ 385,220	$ 615,647	$ 716,917	$ 738,424	$ 760,577
State						
Formula Assistance	$ 126,000	$ 129,780	$ 133,673	$ 137,684	$ 141,814	$ 146,069
Local Contributions						
City of Winchester	$ 283,000	$ 291,490	$ 407,510	$ 419,735	$ 432,327	$ 445,297
Revenues- Farebox and Advertising	$ 90,500	$ 93,215	$ 136,131	$ 155,215	$ 159,871	$ 164,668
Old Town Development Board/Visitor's Center to support Trolley *			$ 57,289	$ 59,008	$ 60,778	$ 62,601
Frederick County to support fixed route extensions*			$ 86,183	$ 88,768	$ 91,432	$ 94,174
Frederick County to support corridor service*				$ 82,801	$ 85,285	$ 87,843
Total Local	$ 373,500	$ 384,705	$ 687,113	$ 805,527	$ 829,693	$ 854,583
Total Projected/Proposed Operating Funds/Revenues	**$ 873,500**	**$ 899,705**	**$ 1,436,433**	**$ 1,660,127**	**$ 1,709,931**	**$ 1,761,229**
Surplus/Deficit	$ 24,306	$ 25,036	$ 40,494	$ 56,708	$ 58,410	$ 60,162

Notes:
(1) A 3% annual rate of inflation has been assumed.
(2) Funding sources that are not currently in place are marked with an asterisk.
(3) The route extensions into Frederick County have been split 50% S.5307, 25% City, 25% County.
(4) The Route 11 corridor route has been split between S.5311 and Frederick County.
(5) Service improvements for the current program area split 50% S.5307, 50% City
(6) Fares for fixed-route extensions are assumed at 75 cents; fares for corridor service, $1.00.

Note: Frederick County Extensions not included in MPO CLRP

Table 7-5: Winchester Transit 6-Year Projected Vehicle Purchases by Funding Source (2011 TDP)

Number of Vehicles	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017
Replacement	4	3	0	4	0	0
Expansion	0	0	4	1	1	1
Total Vehicles	4	3	4	5	1	1
Vehicle Costs						
Replacement	$ 231,000	$ 344,020	$ -	$ 320,460	$ -	$ -
Expansion	$ -	$ -	$ 278,250	$ 80,115	$ 82,518	$ 84,994
Total Projected Vehicle Costs	$ 231,000	$ 344,020	$ 278,250	$ 400,575	$ 82,518	$ 84,994
Anticipated Funding Sources						
Federal	$ 184,800	$ 275,216	$ 222,600	$ 320,460	$ 66,015	$ 67,995
State	$ 23,100	$ 34,402	$ 27,825	$ 40,058	$ 8,252	$ 8,499
Local	$ 23,100	$ 34,402	$ 27,825	$ 40,058	$ 8,252	$ 8,499
Total Vehicle Funding	$ 231,000	$ 344,020	$ 278,250	$ 400,575	$ 82,518	$ 84,994

Between 2011 and 2016, VDRPT anticipates approximately $1.01 million to be spent by Winchester Transit to purchase replacement and expansion rolling stock (See table 7-5). This would be enough for Winchester Transit to replace all of the existing buses (Assuming 3 buses providing fixed route service, 1 spare bus to fill in for buses that are in the shop or to reduce delays when a bus is running late and 1 bus for Para-transit.) The funding would also allow Winchester Transit to purchase at least one bus to be used to expand service into Frederick County and add an additional bus to expand para-transit service into the county. By 2011, this would allow Winchester Transit sufficient equipment to make minor service expansions.

To forecast the operations, maintenance and capital costs through 2035 the following assumptions were assumed.

Winchester Transit would add one (1) full size bus and all of the other buses would remain cutaway (body-on-chaises) style buses. These vehicles would be replaced on a regular schedule over the planning period.

Replacement cost:
- Full size bus: $350,000
- Cutaway bus: $85,000

Replacement schedule:
- Full size bus: every 12 years
- Cutaway bus: every 5 years

- New routes servicing Frederick County could be added in future years
- Allocation of $100,000 for use on other capital projects every 3 years.
- Federal funding for capital expenditure would remain at 80% of total with the state and local governments each accounting for 10%.
- Replacement of buses occurring in a staggered pattern.
- 3% inflation rate for operations and maintenance

Based on these assumptions operations and capital costs have been projected from 2012 to 2035 and are presented in **Table 7-6**. This program assumes continuation of federal funding programs at approximately current levels in constant dollars and of state funding programs at the levels, in 2011 dollars. It also assumes that local funds sufficient to support the proposed capital program and system operations will be available. The program could change if the nature of the development that occurs in Winchester and Frederick County over the planning period is of a pattern that encourages greater or lesser use of public transportation.

Table 7-6: Winchester Transit Capital Cost Program 2012 to 2035

FY	Operating		Capital	
	Projected Expenses	Projected Revenues	Projected Expenses	Projected Revenues
2012	$ 849,194	$ 873,500	$ 231,000	$ 231,000
2013	$ 874,669	$ 899,705	$ 344,020	$ 344,020
2014	$ 1,395,939	$ 1,436,433	$ 278,250	$ 278,250
2015	$ 1,603,419	$ 1,660,127	$ 400,575	$ 400,575
2016	$ 1,651,521	$ 1,709,931	$ 82,518	$ 82,518
2017	$ 1,701,067	$ 1,761,229	$ 84,994	$ 84,994
2018	$ 1,752,099	$ 1,814,066	$ 85,000	$ 85,000
2019	$ 1,804,662	$ 1,868,488	$ 170,000	$ 170,000
2020	$ 1,858,802	$ 1,924,542	$ 185,000	$ 185,000
2021	$ 1,914,566	$ 1,982,279	$ 85,000	$ 85,000
2022	$ 1,972,003	$ 2,041,747	$ 170,000	$ 170,000
2023	$ 2,031,163	$ 2,103,000	$ 185,000	$ 185,000
2024	$ 2,092,098	$ 2,166,090	$ 170,000	$ 170,000
2025	$ 2,154,861	$ 2,231,072	$ 85,000	$ 85,000
2026	$ 2,219,507	$ 2,298,004	$ 185,000	$ 185,000
2027	$ 2,286,092	$ 2,366,945	$ 170,000	$ 170,000
2028	$ 2,354,675	$ 2,437,953	$ 85,000	$ 85,000
2029	$ 2,425,315	$ 2,511,091	$ 270,000	$ 270,000
2030	$ 2,498,074	$ 2,586,424	$ 85,000	$ 85,000
2031	$ 2,573,016	$ 2,664,017	$ 170,000	$ 170,000
2032	$ 2,650,207	$ 2,743,937	$ 185,000	$ 185,000
2033	$ 2,729,713	$ 2,826,256	$ 170,000	$ 170,000
2034	$ 2,811,605	$ 2,911,043	$ 85,000	$ 85,000
2035	$ 2,895,953	$ 2,998,374	$ 170,000	$ 170,000
Total	$ 49,100,218	$ 50,816,253	$ 4,131,357	$ 4,131,357

3% annual rate of inflation assumed

Capital: includes rolling stock and other expenses

Bicycle and Pedestrian Funding

SAFETEA-LU requires that standalone bicycle and pedestrian projects be included in the 2035 Constrained Long Range Plan for known funding sources such as Highway and Transit funding described in the above sections.

There are other competitive funding sources for bicycle and pedestrian standalone projects that may be available to the Win-Fred MPO, including the Enhancement program, Bicycle – Pedestrian Safety funds, Revenue Sharing program, and Safe Routes to Schools program. Localities within the Win-Fred MPO area may apply for and succeed in being awarded funding and grants from these competitive funding sources for standalone bicycle and

pedestrian projects. Due to their uncertainty and competitive nature, projections for these funding sources are unknown and not considered in developing the Win-Fred MPO Constrained Long Range Plan.

New trails, on-road bikeways, and sidewalk projects, programs, and maintenance activities will need to be funded through various sources. Because of this, it will be important for the County, City, and Town to:

- Establish specific funding sources to use as matching funds for federal, state, and other grants. These funds can be generated through donations from community groups, through the proffer system, and through the capital budget if necessary.
- Partner with local governments and adjacent jurisdictions to develop funding sources
- Look for additional funding opportunities from the public and private sectors

The VDOT Policy for Integrating Bicycle and Pedestrian Accommodations applies to all projects in the TIP, CIP, and County Plans, that involve VDOT right of way or use funds that flow through VDOT. This policy requires that these projects will be initiated with the presumption that they will accommodate pedestrians and bicyclists. However, it will still be important for the County, City, and Town to continue to make specific requests for pedestrian and bicycle facilities to be included in project descriptions within the TIP, SYIP and jurisdiction capital improvement programs.

In addition, the County, City, and Town should monitor the planning, design, and construction of these projects to ensure that they accommodate pedestrians and bicyclists adequately.

There are several other sources of VDOT funding that can be used to develop pedestrian and bicycle facilities (see table below). Most of the funding sources described below require a local match – up to 20% of the project cost, in some cases (with the exception of the Safe Routes to Schools Program, which is 100% Federal funding). Fortunately, in-kind donations of materials, labor, and land can be used as matching funds. Through a creative strategy of volunteer assistance and land donation, other Virginia counties have been able to generate matching funds with very little capital outlay.

Prioritization of Roadway Funding

The CLRP was initially developed by the Win-Fred MPO Technical Advisory Committee after conducting a review of Vision Plan roadway priorities and projected funding out to the year 2035. This list of CLRP candidate projects was approved by the MPO policy board on September 21, 2011. Funding recommendations are detailed below by funding category, identifying project funding, recommendation, and reasoning. Full funding of the Constrained Long Range Plan projects can only be reasonably expected if all potential funding sources are pursued. Description of funding categories can be viewed here:

Interstate Funds

Interstate funds enable the design and prepare plans, acquire needed land and construct roads and bridges on the interstate highway system. The interstate program is federally funded with state funding providing the needed match.

Funding Needed: **$177,097,500**

Recommendation: There are three I-81 interchange improvement projects included in the Vision Plan that are included in as priorities in the Constrained Long Range Plan.

- Interchange at Exit 307 (Route 277)
- Interchange at Exit 310 (Route 37S/SR 642)
- Interchange at Exit 313 (US 17/50/522)

Reasoning: Interstate funds can only be spent on Interstate projects and the amount available to the region is insufficient to complete virtually any meaningful segment link widening of the I-81 improvements that are in the Vision Plan. It is more realistic to include only the interchange improvements in the CLRP and maintain widening in the Vision Plan.

Primary Roadway Funds

The primary construction system is made up of roads that connect cities and towns with each other and with interstates. Primary roads serve the state in the same manner as the Interstate system serves the nation. Historically, the primary construction program received 40% of the funds available for state formula distribution.

Funding Needed: **$97,860,130**

Recommendation: Allocate dollars for right-of-way, engineering and construction for Route 277 widening. $7,065,630

Route 37 Extension from I-81 to newly constructed partial interchange at US 522 - $31,322,000 for roadway extension and $59,482,500 for interchange

US 11 – South City Limits to Middle Road, improve drainage near Tevis, add curb, gutter and sidewalks on entire section - $5,500,000

Reasoning: The Route 277 widening & US 11 project is in the VDOT Six-Year Program with nearly full funding for design and right-of-way.

Secondary Roadway Funds

The purpose of the secondary construction service area is to design and prepare plans, acquire needed land and construct roads and bridges on the secondary highway system. Historically, the secondary construction program received 30% of the funds available for state formula distribution and allocated to the counties.

Funding Needed: **$98,122,500**

Recommendation: Warrior Drive widening to 4 lanes from Route 277 to Opequon Creek – $38,640,000

Interchange Warrior Drive at Route 37 - $59,482,500

Reasoning: The Warrior Drive widening to 4 lanes is essential to accommodate the anticipated growth / future traffic generation. While the entire length of Warrior Drive, from Route 277 to Route 522, will ultimately be a 4-lane roadway, it is anticipated that the segments of Warrior Drive north of the Opequon Creek would be constructed by the development community. Therefore, the segment of Warrior Drive south of the Opequon Creek would be a logical public project.

Urban Roadway Funding

The purpose of the urban construction service area is to design and prepare plans, acquire needed land and construct roads and bridges on the urban highway system. Historically, the urban construction program received 30% of the funds available for state formula distribution and allocated to the cities and towns.

Funding Needed: **$27,000,000**

Recommendation: Hope Drive – Tevis Street Extension – Construct Urban 4-lane arterial connection between US 11 in the City of Winchester and US 522 in Frederick County. Project included Tevis Street extension, new bridge over I-81, sidewalks, bicycle lanes, and realignment of Papermill and Tevis over railroad tracks in the City.

Reasoning: This connection has significant benefit to existing east-west roadways in the MPO region improving access and safety for motorists, pedestrians, cyclists, transit and good movement. The project also improves access to the Winchester Regional Airport.

Developer-Funded Projects

Funding Allocation: **To be determined**

Proposed Projects: There are a number of projects that have been proffered by private sector sources. These are described in the committed transportation projects in Chapter 5. Additional contributions to adopted CLRP projects may offset the cost of certain CLRP projects including but not limited to the Hope Drive/ Tevis Street Extension and the Route 37 extension project. Often private funds can leverage state funding appropriated annually by the Commonwealth through Financial Assistance to Localities for City & County Road Maintenance, Planning, Access Roads and Special Projects.

Consistency with Virginia's Strategic Highway Safety Plan

The metropolitan transportation planning process should be consistent with Virginia's Strategic Highway Safety Plan. This statewide safety plan is a living document that will continue to be developed and updated. MPO plans and programs should consider elements and strategies of this statewide safety plan in order to effectively implement them within our MPO urbanized area and help achieve everyone's desired goal of reducing injuries and deaths related to crashes.

Win-Fred MPO has considered and will continue to consider many of these statewide safety elements and strategies. Some examples of MPO plans and programs that include these safety elements and strategies are:

- 2035 Long Range Plan evaluated crash information and identified top crash locations
- 2035 Long Range Plan included a list of sidewalk deficiencies in the City of Winchester and Town of Stephens City, 2007 MPO Bicycle and Pedestrian Mobility Study, Bike Route Analysis for MPO area (taken

- 2035 Long Range Plan included a list of sidewalk deficiencies in the City of Winchester and Town of Stephens City, 2007 MPO Bicycle and Pedestrian Mobility Study, Bike Route Analysis for MPO area (taken from Northern Shenandoah Valley Regional Commission's Walking and Wheeling the Shenandoah Valley, Winchester Green Circle Trail, and Stephens City Bike and Trails Plan.
- UPWP includes signalization & safety studies at several high crash locations as top priority studies for the MPO to conduct in next fiscal year. UPWP also includes several corridor management studies, bicycle pedestrian level of service analysis project and public mobility programs
- MPO TIP includes Interstate Safety Projects at a number of I-81 interchanges, as well as bicycle and pedestrian safety Projects in the City of Winchester and Frederick County
- The MPO Bicycle and Pedestrian Plan, completed in 2007, identifies short, medium and long-term safety and interconnectivity needs and strategies to improve conditions for bicyclists and pedestrians.

Summary of Virginia's Strategic Highway Safety Plan (SHSP)

Transportation Safety is a top public health concern in the Commonwealth, costing almost 1,000 lives in Virginia every year. Crashes are the leading cause of death for ages 1 to 29. Crashes typically injure more than 75,000 Virginia citizens every year, and our state's injury rate is higher than the national average. The Strategic Highway Safety Plan recognizes that transportation safety is a personal and shared responsibility. Reducing injuries and deaths on Virginia roads requires the commitment of informed decision making by multiple government agencies, industry, non-governmental organizations and citizens statewide.

Virginia's Mission Statement

- To save lives and to reduce injuries from motor vehicle crashes in Virginia through the integration of education, enforcement, engineering, and emergency response actions.

Virginia's Vision Statement

- To make Virginia's surface transportation system the safest in the nation by 2025.

Virginia's 2010 Goals

- To reduce from 2005 levels, the annual number of injuries and deaths due to motor vehicle crashes in Virginia by 100 deaths and 4,000 injuries by 2010.

SHSP Emphasis Areas

The primary performance measures for transportation safety are reductions in annual injuries and deaths. The following emphasis areas were selected to direct the safety programs which provide the substance of the Strategic Highway Safety Plan:

1. Human Factors
   - Driver behavior
   - Special users
   - Pedestrian and bicyclist safety
2. Environmental
   - Intersection safety
   - Roadway departures
   - Work zone safety
   - Pedestrian and bicycle safety
3. Fundamental Emphasis Area
   - Traffic records
   - Transportation safety planning

Most of these emphasis areas include strategies that may be related to metropolitan transportation planning.

Operations, Management and ITS

Operations, Management and Intelligent Transportation Systems (ITS) are key elements in the overall design of MPO and regional transportation systems. Operations and Management planning may include traffic safety and flow, coordination between highway and transit operations, coordination among public safety and transportation agencies, traffic signalization, corridor management strategies, and planning for non-recurring events. The Win-Fred MPO considers these types of operational and management strategies during development of major plans and programs such as the TIP, UPWP and Long Range Plan in order to improve the performance of existing transportation facilities, to relieve vehicular congestion, and maximize the safety and mobility of people and goods.

The Win-Fred MPO shall maintain the regional ITS architecture in accordance with federal law and regulations, and shall, to the maximum extent practicable, be consistent with development of applicable Regional ITS architecture. The MPO will work with VDOT to improve and enhance the operation of these systems and strategies. A number of access and congestion management projects are identified in the 2035 LRTP and Vision plan:

- Develop Access Management Plan for US 17/50
- Develop Access Management Plan for US Route 522
- Develop Access Management Plan for US Route 11
- Develop Access Management Plan for Pleasant Valley Road Corridor
- Consider potential improvements if EPA Deferral is rescinded after 2007
- Ozone Alert days
- Car Pooling/Van Pooling
- Traffic signal synchronization
- Electric Hookups at Truck stops to reduce idling

Environmental Overview

SAFETEA-LU requires CLRPs to include a discussion of potential environmental mitigation activities and potential mitigation areas. This mitigation discussion was developed in consultation with Federal, State and local resource agencies as described in Appendix G of the Plan Amendment.

Potential Environmental Mitigation Activities and Areas

Metropolitan transportation planning is a regional process that is used to identify the transportation issues and needs in the Win-Fred MPO area which consists of the City of Winchester, the urbanized portion of Frederick County, and the Town of Stephens City. Since the population in this area is over 50,000, federal regulation state that the responsibility for transportation planning lies with the Metropolitan Planning Organization (MPO). This planning process is a collaborative effort between the Winchester, Frederick County, Stephens City, the Virginia Department of Transportation, Winchester Transit, the Winchester Regional Airport, and other transportation mode representatives. During the plans development the MPO examines land development patterns, demographics, travel patterns and trends to identify existing and future transportation problems. The MPO then identifies alternatives to meet current and projected future demands that will provide a safe and efficient transportation system that meets the needs of the traveling public while limiting adverse impacts to the environment. This region is designated as an MPO area

and all the jurisdictions in this region work together to develop a constrained long-range transportation plan.

The constrained long-range transportation plan (CLRP) for this region identifies and recommends a capital investment strategy to meet the existing and future transportation needs of the public over the next 20 years. The inclusion of a recommended improvement in the long range transportation plan represents preliminary regional support for that improvement. The CLRP is a decision-making tool to determine which projects should be implemented. Transportation improvements go through several steps from conception to implementation and take many years to successfully complete.

The considerations and recommendations made during the planning process are preliminary in nature. Detailed environmental analysis conducted through the National Environmental Policy Act (NEPA) does not apply to long range transportation plans. With exceptions for regional ambient air quality, offsetting environmental impacts during the long-range planning process is not required. While detailed environmental analysis is not required, it is important to consult with environmental resource agencies during the development of a long-range transportation plan.

This interagency consultation provides an opportunity to compare transportation plans with environmental resource plans, develop a discussion on potential environmental mitigation activities, areas to provide the mitigation, and activities that may have the greatest potential to restore and maintain the environment.

Detailed environmental analysis of individual transportation projects occurs later in the project development process as the improvement approaches the preliminary engineering stage. At this stage, project features may be narrowed and refined, and the environmental impacts and environmental mitigation strategies can be appropriately ascertained. Virginia's State Environmental Review Process directs the project-by-project interagency review, study and identification of environmental concerns. Related requirements that typically apply at this stage involve public hearings, environmental permit-processing, and NEPA studies. Usually, a variety of environmental documentation, permit and mitigation needs are identified and environmental findings are closely considered and evaluated. Common project environmental mitigation measures (required silt-fence barriers, precautions to control dust, etc) are managed using Road and Bridge Standards that apply to all construction activities. Special environmental concerns, however, may differ widely by project and location. As environmental studies are conducted and undergo public and interagency review, needed mitigation plans are specified and committed to within the environmental documents on the particular transportation project or activity.

Environmental management systems then are used to monitor, and ensure compliance with, the environmental mitigation commitments.

Potential environmental mitigation activities may include: avoiding impacts altogether, minimizing a proposed activity/project size or its involvement, rectifying impacts (restoring temporary impacts), precautionary and/or abatement measures to reduce construction impacts, employing special features or operational management measures to reduce impacts, and/or compensating for environmental impacts by providing suitable, replacement or substitute environmental resources of equivalent or greater value, on or off-site. Where on-site mitigation areas is not reasonable or sufficient, relatively large off-site compensatory natural resource mitigation areas generally may be preferable, if available. These may offer greater mitigation potential with respect to planning, buffer protection and providing multiple environmental habitat value (example: wetland, plant and wildlife banks).

Mitigation activities and the mitigation areas will be consistent with legal and regulatory requirements relating to the human and natural environment. These may pertain to neighborhoods and communities, homes and businesses, cultural resources, parks and recreation areas, wetlands and other water sources, forested and other natural areas, agricultural areas, endangered and threatened species, and the ambient air. The following table illustrates some potential mitigation activities and potential mitigation areas for these resources:

Table 7-7: Environmental Mitigation Options for Transportation Projects

Resource	***Key applicable requirements***	***Potential mitigation activities for project implementation***	***Potential mitigation areas for project implementation***
Neighborhoods and communities, and homes and businesses	Uniform Relocation Assistance and Real Property Acquisition Policy Act at 42 USC 4601 et seq.	Impact avoidance or minimization; context sensitive solutions for communities (appropriate functional and/or aesthtic design features).	Mitigation on-site or in the general community. (Mitigation for homes and businesses is in accord with 49 CFR 24)
Cultural resources	National Historic Preservation Act at 16 USC 470	Avoidance, minimization; landscaping for historic properties; preservation in place or excavation for archaeological sites; Memoranda of Agreement with the Department of Historic Resources; design exceptions and variances; environmental compliance monitoring	On-site landscaping of historic properties, on-site mitigation of archeological sites; preservation in-place
Parks and recreation areas	Section 4(f) of the U.S. Department of Transportation Act at 49 USC 303	Avoidance, minimization, mitigation; design exceptions and variances; environmental compliance monitoring	On site screening or on-site replacement of facilities; in some cases, replacement of affected property adjacent to existing
Wetlands and water resources	Clean Water Act at 33 USC 1251-1376; Rivers and Harbors Act at 33 USC 403	Mitigation sequencing requirements involving avoidance, minimization, compensation (could include preservation, creation, restoration, in lieu fees, riparian buffers); design exceptions and variances; environmental compliance monitoring	Based on on-site/off-site and in-kind/out-of-kind sequencing requirements; private or publicly operated mitigation banks used in accordance with permit conditions

Resource	***Key applicable requirements***	***Potential mitigation activities for project implementation***	***Potential mitigation areas for project implementation***
Forested and other natural areas	Agricultural and Forest District Act (Code of VA Sections 15.2-4305; 15.2-4307-4309; 15.2-4313); Open Space Land Act (Section 10.1-1700-1705, 1800-1804)	Avoidance, minimization; Replacement property for open space easements to be of equal fair market value and of equivalent usefulness; design exceptions and variances; environmental compliance monitoring	Landscaping within existing rights of way; replacement property for open space easements to be contiguous with easement; replacement of forestry operation within existing agriculture/forestal district
Agricultural areas	Farmland Protection Policy Act of 1981 at 7 USC 4201-4209, Agricultural and Forest District Act (Code of VA Sections 15.2-4305; 15.2-4307-4309; 15.2-4313)	Avoidance, minimization; design exceptions and variances; environmental compliance monitoring	Replacement of agricultural operation within existing agriculture/forestal district
Endangered and threatened species	Endangered Species Act at 16 USC 1531-1544	Avoidance, minimization; time of year restrictions; construction sequencing; design exceptions and variances; species research; species fact sheets; Memoranda of Agreements for species management; environmental compliance monitoring	Relocation of species to suitable habitat adjacent to project limits
Ambient air quality	Clean Air Act at 42 USC 7401-7671, and Conformity regulations at 40 CFR 93	Transportation control measures, transportation emission reduction measures	Within air quality non-attainment and maintenance areas

Conformance to Metropolitan Planning Requirements

The Win-Fred MPO 2035 Transportation Plan is required to address eight planning factors, as identified in SAFETEA-LU. A summary follows on how this plan addresses each planning factor.

1. **Support the economic vitality of the metropolitan planning area, especially by enabling global competitiveness, productivity, and efficiency.** The Winchester metropolitan area is continuing to provide a vital role in northwestern Virginia along the I-81 corridor, and many businesses are located in this region precisely because of the advantages that the Winchester area offers. In addition, the pressure from the growing Washington, DC. Area is being felt in the Winchester area as more long-distance commuters move to the greater Winchester area. The plan's focus on improvements to I-81, its interchanges, and the major roadways serving the region, including Route 37 and Route 7, will allow the region to continue to grow and prosper.

2. **Increase the safety of the transportation system for motorized and non-motorized users.** The 2035 Transportation Plan included a review of high crash rates at intersections and at-grade rail crossings within the region. Missing pedestrian linkages were addressed with the identification of future sidewalk needs, plus the region has recognized that a comprehensive bicycle and pedestrian plan is needed to plan for a safer and more cohesive bicycle and pedestrian network. The plan also includes recommendations for access management studies on several major arterial highways in the region to make existing roadways safer for the traveling public.

   MPO planning process will utilize available plans to help identify candidate projects. The current MPO TIP includes Interstate Safety Projects at six I-81 interchanges, as well as five Bike-Ped Safety Projects in the City of Winchester. The MPO UPWP includes several candidate corridors for safety and management studies.

3. **Increase the security of the transportation system for motorized and non-motorized users.**
   The Disaster Mitigation Act was adopted in 2000 which requires that local governments develop and adopt natural hazard mitigation plans in order to receive certain federal assistance. In light of the attacks on September 11, 2001 the Federal Government created the Department of Homeland Security which brought under its umbrella, the Federal Emergency Management Agency (FEMA) which tasked each state's emergency management department with the creation of the Hazard Mitigation Plan. Beginning in

2003, the Commonwealth of Virginia encouraged the twenty-one planning districts in the commonwealth to take the lead on the development of local hazard mitigation plans. The Northern Shenandoah Valley Regional Commission was tasked with creating the mitigation plan in the fall of 2005. The Northern Shenandoah Valley Multi-Jurisdictional Hazard Mitigation Plan was adopted in January of 2007 and an update is currently underway in 2012. The hazard mitigation plan includes the City of Winchester, Frederick County, and the Town of Stephens City, the jurisdictions making up the Win-Fred MPO.

The Hazard Mitigation Plan aims at addressing all issues dealing with natural hazards. The Mitigation Advisory Committee (MAC) was comprised of various members of elected officials, planners, emergency service personnel as well as various regional and state organizational members. The members of the MAC elected also to look at the possibility of mitigating against manmade disasters due to the area's proximity to the Greater Washington DC area. The plan focused on mitigating any type of emergency due natural disasters and basis for much of the plan came from each jurisdiction's Emergency Operations Plan (EOP).

Therefore it is within the interests of the Win-Fred MPO to reference the Northern Shenandoah Valley Multi-Jurisdictional Hazard Mitigation Plan of January 2007 as well as the Emergency Operations Plans as amended of Frederick County and the City of Winchester in order to be more aware of both safety and security with regard to transportation planning within the Win-Fred MPO.

4. **Increase the accessibility and mobility options of people and freight.** The MPO will continue to plan for moving people and freight more efficiently through and within the region. The MPO will participate in or lead in improving accessibility and mobility options through the following studies/efforts:

   - I-81 Corridor Improvement Study
   - Expansion of Winchester Transit in Frederick County
   - MPO Bicycle and Pedestrian Plan and Implementation

   In addition, the need for improved transit, pedestrian and bicycle accommodations was identified during the public outreach process of this study, and the Vision Plan and ongoing planning efforts in the region that address these concerns to improve not just the extent of services, but also the quality of services, such as completion of missing sidewalks, development of a MPO bicycle network, improved transit street signage, increased transit information, improved bus shelters, and improved transit vehicles.

5. **Protect and enhance the environment, promote energy conservation, and improve quality of life, and promote consistency between transportation improvements and State and local planned growth and economic development patterns.** The member jurisdictions of the Win-Fred MPO have developed their Comprehensive Plans to guide the growth of their communities and this has been the basis for the analysis of land use and transportation needs. Traffic congestion will increase in the future, and many future transportation projects will be developed to minimize traffic congestion on vital commercial and commuting roadway corridors, such as Route 7, US 17/50, US 522, Tasker Road, and US 11. The expansion of the roadway network needed to accommodate the projected growth in the Win-Fred MPO region will be vital to reducing future congestion, thereby helping to improve the quality of life. In addition, the needs of the region's transit-dependent population will be better served with a transit system that is not confined with the City's boundaries and can make connections with vital employment, educational, and residential areas within the region. Future consideration of bus services into Frederick County may be possible as demand warrants. The development of improved bicycle and pedestrian facilities in the region will also help to improve the quality of life, enhance the environment and promote energy conservation.

   In order to promote consistency between Plan recommendations and local growth and development, land use growth forecasts were by localities based on local comprehensive plans and recent growth trends. The Win-Fred travel demand model utilizes these land use forecasts in order to estimate future traffic forecasts.

6. **Enhance the integration and connectivity of the transportation system, across and between modes, for people and freight.** The continued growth of the Win-Fred MPO region will place increased demands on the region to continue to serve its residents and businesses effectively. The 2035 Transportation Plan promotes more efficient travel, the use of travel demand management strategies, such as park and ride facilities and telework centers, and the promotion of increased express bus service to the Washington, D.C. area. For goods movements, the region will grow and support continued growth of rail service on the existing CSX and W&W lines within the region and the nearby Norfolk Southern rail line in nearby Warren County at the Front Royal Inland Port. The continued growth of truck freight traffic on I-81 and on US 522 servicing the Inland Port has been anticipated in this study.

7. **Promote efficient system management and operation.** The 2035 Transportation Plan evaluated improvement alternatives during the Vision Plan process to ensure that the most efficient roadway network was

identified and selected. The Vision Plan provides a starting point to managing regional transportation assets more efficiently, continuing a focus on addressing congested roadway corridors, but with a balanced approach to roadway versus travel demand and non-motorized investments, such as park and ride facilities and bike trails.

The UPWP and TIP include signalization and safety studies at several high crash locations as top priority studies for the MPO. The UPWP also includes several corridor management studies including a public mobility plan, and bicycle / pedestrian inventory and level of service analysis / mapping.

8. **Emphasize the preservation of the existing transportation system.** The 2035 Transportation Plan has a strong focus on improving existing roadways and services. The study's focus on congestion on existing roadways included an evaluation of when new roadway construction would result in additional congestion where it would otherwise not exist (i.e., creating more congestion), and this helped to guide the selection of both the Vision Plan and the CLRP. Better management of existing facilities, through safety improvements, improved roadway shoulders and turn lanes, park and ride facilities, expanded and improved bus service and improved access management will all help to preserve the integrity of the existing transportation system.

Environmental Justice Review

Intent

There are three fundamental Environmental Justice principles:

1. To avoid, minimize, or mitigate disproportionately high and adverse human health or environmental effects, including social and economic effects, on minority populations and low-income populations.
2. To ensure the full and fair participation by all potentially affected communities in the transportation decision-making process.
3. To prevent the denial of, reduction in, or significant delay in the receipt of benefits by minority populations and low-income populations

Environmental Justice is intended to ensure that the process of transportation planning is consistent with the provisions of Title VI of the Civil Rights Act. Environmental Justice focuses on enhanced public involvement and an analysis of the distribution of benefits and impacts. Consistent with the U.S. DOT Order on Environmental Justice, disproportionately high and adverse impacts should be mitigated where possible. Beyond this mitigation requirement, there is no

presumed distribution of resources to sustain compliance with the Environmental Justice provisions. The intent is to ensure that no person is denied benefits based on race, color, or national origin.

Public involvement is an integral part of transportation planning and project development decision-making. Environmental Justice guidelines direct MPOs to provide minority populations and low-income populations greater access to information on, and opportunities for public participation in matters that may affect human health and the environment. SAFETEA-LU also emphasizes the meaningful involvement by all the public in transportation decision making.

Currently, our most proactive process for identifying the needs of the targeted populations is our Public Involvement Process. This process recognizes the importance of having the public involved in the transportation planning processes. The adopted proactive Public Involvement Process is used to gain insight and perspective from citizens before transportation projects are put into effect. Included in our public involvement process are our mailing list, e-mail listing, community and group presentations, announcements in local newspapers, and our website that publishes meeting notices, reports, and summaries. Feedback is gathered from citizens at the public involvement meetings, the information is provided to the Win-Fred MPO committees for review and outlining of procedures to be used in the transportation plan or program.

The Win-Fred Metropolitan Planning Organization's efforts are designed to support the Environmental Justice effort.

Environmental Justice Analysis

An analysis was completed for the Win-Fred MPO region to identify the location of low-income and minority populations. As shown in **Table 7-8**, the minority population as a percentage of total population in the Win-Fred MPO region is significantly below the state average. The City of Winchester contains a significantly higher percentage of the MPO's minority population than Frederick County. The Win-Fred MPO region closely mirrors the state average in percent of population considered low income. This varies between the City of Winchester with a high of 13.2% and Frederick County, with a low of 6.4%.

Table 7-8: Environmental Justice Target Populations

	Percentage of Total Population	
Area	**Low Income**	**Minority**
City of Winchester	13.2%	18.2%

Frederick County (includes Stephens City)	6.4%	5.1%
Total MPO	**9.2%**	**10.8%**
Commonwealth of Virginia	9.6%	27.7%

The spatial location of these populations is very important in the assessment of how the transportation plan or any transportation action may effect (positive or negative) the mobility or livelihood of these populations. **Figure 7-1** displays the locations of minority populations and **Figure 7-2** displays the locations of low-income populations. The analysis was performed using 2010 Census block groups.

Appendix A – Public Involvement Summary

Draft Plan Outreach Letters

WinFred Metropolitan
Planning Organization
400 Kendrick Lane, Suite E
Front Royal, Virginia 22630
Phone: 540-636-8800
Fax: 540-635-4147
Website: www.winfredmpo.org

March 22, 2012

Agency
Address
City, State, Zip

Re: WinFred MPO Draft 2035 Long Range Transportation Plan (LRTP) Update

Dear Sir or Madam,

The Winchester-Frederick County Metropolitan Planning Organization (WinFred MPO) has drafted the 2035 Long Range Transportation Plan (LRTP) and the fiscally constrained component of the Plan. A copy of the Draft 2035 LRTP is available for your review at www.winfredmpo.org/transplan_final.asp.

Federal law requires that transportation plans be developed in consultation, as appropriate, with State and Local agencies responsible for land use and natural resources management, environmental protection, conservation, and historic resources in order to allow for the evaluation of transportation plans relative to other applicable planning documents, plans, and programs. Consultation with other stakeholders is also encouraged.

This letter requests review and comment from your agency for comparison of the transportation plan to the plans of your agency. A copy of the proposed 2035 Long Range Transportation Plan update is available at www.winfredmpo.org/transplan_final.asp. If you have any issues accessing the plan online, need special assistance or would like to request a different format please contact us.

The WinFred MPO Citizens Advisory Committee will host a public input meeting on Thursday, March 29, 2012 from 5 p.m. to 7 p.m. at the Our Health building, 329 N. Cameron Street, Winchester, VA. Staff is also available to meet in person upon request. Comments received prior to April 14, 2012 will be reviewed prior to final plan adoption. Any comments received after April 14, 2012 will be kept on file and considered in future updates. In submitting comments, please identify any sensitive information that is not intended for public disclosure.

All comments should be forwarded to the WinFred Metropolitan Planning Organization using the following contact information:

Ms. Karen Taylor, Northern Shenandoah Valley Regional Commission
400 Kendrick Lane, Suite E, Front Royal, VA 22630

Comments can also be forwarded via email to ktaylor@NSVregion.org. Please contact me at (540) 636-8800 if you have any questions or if you would like additional information.

Sincerely,

Martha Shickle, Secretary-Treasurer
Winchester-Frederick County Metropolitan Planning Organization

Outreach Lists

Agency/Organization Outreach	City	State
AARP Virginia State Office	Richmond	VA
Bike Walk Virginia	Williamsburg	VA
Community Integration for People with Disabilities	Richmond	VA
Department of Conservation and Recreation	Richmond	VA
Department of Emergency Management	Richmond	VA
Department of Housing and Community Development	Richmond	VA
Department of Mines, Minerals, and Energy	Charlottesville	VA
Federal Highway Administration	Sterling	VA
League of American Bicyclists	Washington, D.C.	VA
Local Office on Aging	Roanoke	VA
Metroped	Alexandria	VA
National Park Service	Atlanta	GA
Office of Commonwealth Preparedness	Richmond	VA
Rails-to-Trails Conservancy	Washington, D.C.	
U.S. Army Corps of Engineers-Wilmington District	Wilmington	NC
U.S. Department of Transportation	Washington, D.C.	
U.S. Fish and Wildlife Service	Washington, D.C.	
U.S. Geological Survey-Environmental Affairs Program	Reston	VA
US EPA Region III	Philadelphia	PA
USDA Forest Service	Atlanta	GA
USDA Natural Resources Conservation Service	Richmond	VA
Virginia Bicycling Federation	Arlington	VA

Agency/Organization Outreach	City	State
Virginia Board for People with Disabilities	Richmond	VA
Virginia Department for Blind and Vision Impaired	Roanoke	VA
Virginia Department for Deaf and Hard of Hearing	Richmond	VA
Virginia Department of Environmental Quality	Richmond	VA
Virginia Department of Forestry	Salem	VA
Virginia Department of Game and Inland Fisheries	Richmond	VA
Virginia Department of Historic Resources	Richmond	VA
Virginia Economic Development Partnership	Richmond	VA
Virginia Employment Commission	Richmond	VA
Virginia Marine Resources Commission	Newport News	VA
Virginia Office for Protection and Advocacy	Richmond	VA
Virginia Tourism Corporation	Richmond	VA
Belle Grove, Inc.	Middletown	VA
Blue Ridge Housing Network	Front Royal	VA
Cedar Creek Battlefield Foundation	Middletown	VA
City of Winchester - Planning Department	Winchester	VA
City of Winchester-Environmental Maintenance	Winchester	VA
Civil War Educational Assoc.	Winchester	VA
Civil War Museum	Winchester	VA
Community Health Services - Frederick Co. & Winchester	Winchester	VA
County of Frederick - Planning Department	Winchester	VA
County of Frederick - Public Works Department	Winchester	VA
Department of Historic Resources	Stephens City	VA
Dept. of Conservation & Recreation	Richmond	VA
Division of Mineral Services	Charlottesville	VA
Forestry Department - Frederick County	Winchester	VA
Frederick Co. Fire & Rescue	Winchester	VA
Historical and Tourism Center	Winchester	VA
HUD - Richmond Office	Richmond	VA
Kernstown Battlefield Association	Winchester	VA
Lord Fairfax Health District	Winchester	VA
Nat. Res. Conservation	Strasburg	VA
Old Court House Civil War Museum	Winchester	VA
Old Town Development	Winchester	VA
Old Town Redevelopment	Winchester	VA
Pidemont Environmental Council	Round Hill	VA
Preservation of Historic Winchester	Winchester	VA
Shenandoah Valley Battlefields Foundation	New Market	VA
SVC Battlefields Historic District	New Market	VA
USDA Rural Development	Strasburg	VA

Agency/Organization Outreach	City	State
VDOT - Edinburg Residency	Edinburg	VA
VHDA	Richmond	VA
Virginia Department of Environmental Quality	Harrisonburg	VA
Virginia Employment Commission	Winchester	VA
Winchester Economic Development	Winchester	VA
Winchester Fire & Rescue	Winchester	VA
Winchester-Frederick County EDA	Winchester	VA
Winchester-Frederick County Historical Society	Winchester	VA
SAAA	Front Royal	VA
Winchester Wheelman	Winchester	VA

Comments Received

COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY

Street address: 629 East Main Street, Richmond, Virginia 23219
Mailing address: P.O. Box 1105, Richmond, Virginia 23218
TDD (804) 698-4021
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Douglas W. Domenech
Secretary of Natural Resources

David K. Paylor
Director

(804) 698-4000
1-800-592-5482

Ms Karen Taylor
Northern Shenandoah Valley Regional Commission
400 Kendrick Lane, Suite E
Front Royal, VA 22630

April 4, 2012

RE: DEQ Office of Wetlands & Stream Protection Scoping Comments on Winchester-Frederick County Metropolitan Planning Organization 2035 Long Range Transportation Plan

Dear Ms. Taylor,

As a long range master plan update document, the DEQ Office of Wetlands and Stream Protection in unable to determine if specific policies, programs, or projects presented in the Winchester-Frederick County Metropolitan Planning Organization 2035 Long Range Transportation Plan Update would impact surface water resources. However, as linear transportation projects typically account for a significant portion of surface water resource impacts in the commonwealth, our office can offer some general guidelines.

If a specific project requires stream and/or wetland impacts, including temporary impacts, then a wetland delineation should be conducted to fully determine the location, extent, and type of wetlands present. The improvements should be designed to avoid and minimize temporary impacts to surface waters to the greatest extent practicable. Once the Corps of Engineers provides confirmation of the delineation, a determination is then made concerning what type of permit from the Corps and Virginia Water Protection Permit from DEQ may be necessary for the project. Compensation for currently unforeseen, unavoidable permanent impacts to streams or wetlands may also be required.

Other considerations with respect to the potential for specific project to impact surface water are as follows:

1. Any temporary impacts to surface waters associated with this project shall require restoration to pre-existing conditions.

2. Erosion and sedimentation controls shall be designed in accordance with the Virginia Erosion and Sediment Control Handbook, Third Edition, 1992. These controls shall be placed prior to clearing and grading and maintained in good working order to minimize impacts to state waters. These controls shall remain in place until the area is stabilized and shall then be removed. Any exposed slopes and stream banks shall be stabilized immediately upon completion of work in each permitted area. All denuded areas shall be properly stabilized in accordance with the Virginia Erosion and Sediment Control Handbook, Third Edition, 1992.

3. No machinery may enter surface waters, unless authorized by a Virginia Water Protection permit.

4. Heavy equipment in temporarily impacted surface waters shall be placed on mats, geotextile fabric or other suitable material, to minimize soil disturbance to the maximum extent practicable. Equipment and materials shall be removed immediately upon completion of work.

5. Activities shall be conducted in accordance with any Time-of-Year restriction(s) as recommended by the Department of Game and Inland Fisheries, the Department of Conservation and Recreation, or the Virginia Marine Resources Commission. The permittee shall retain a copy of the agency correspondence concerning the Time-of-Year restriction(s), or the lack thereof, for the duration of the construction phase of the project.

6. All construction, construction access, and demolition activities associated with this project shall be accomplished in a manner that minimizes construction materials or waste materials from entering surface waters, unless authorized by a permit.

7. Herbicides used in or around any surface water shall be approved for aquatic use by the United States Environmental Protection Agency (EPA) or the U.S. Fish and Wildlife Service. These herbicides should be applied according to the label directions by a licensed herbicide applicator.

Should you have any questions, please feel free to contact me at cpegghart @deq.virginia.gov or 804-698-4377.

Sincerely,

Chris Egghart
Office of Wetlands and Water Protection

Draft Long Range Plan Public Meeting Comments - March 29, 2012

- Support expanded Transit – Service to retail and employment centers in Frederick County on north, east and south sides of Winchester and to LFCC
- Bike/Ped Safety issues on VA 7 – general comment supporting
- Request for increased sidewalk snow removal in City of Winchester
- Bike/Ped Access from Winchester Medical Center Area to Caroline Street/Linden Drive or Pond View Drive
- Complete Green Circle Trail
- Confirm specific alignment of Green Circle Trail to ensure consistency and relationship/right-of-way needs for adjacent properties
- Featherbed Lane at South Loudoun Street – Featherbed Intersection Capacity Improvements

Add any E-mail Comments

From: Owen, Randy (MRC) [mailto:Randy.Owen@mrc.virginia.gov]
Sent: Monday, April 30, 2012 6:24 PM
To: Karen Taylor
Subject: WinFred MPO Draft 2035 Long Range Transportation Plan (LRTP) Update

Please be advised that the Commission, pursuant to Section 28.2-1200 et seq of the Code of Virginia, has jurisdiction over any encroachments in, on, or over the beds of the bays, ocean, rivers, streams, or creeks which are the property of the Commonwealth. Accordingly, if any portion of the subject project involves any encroachments channelward of ordinary high water along natural rivers and streams above the fall line or mean low water below the fall line, a permit may be required from our agency. Any jurisdictional impacts will be reviewed by VMRC during the Joint Permit Application process. Thank you for the opportunity to comment.