



# Comprehensive Plan Amendment Happy Creek, North East, Leach Run Planning Areas



**ADOPTED BY FRONT ROYAL TOWN COUNCIL  
January 28, 2008**

(This document supersedes pages 120 through 123 with companion maps contained in  
OUR VISION FOR FRONT ROYAL)

Landscape Architecture ♦ Architecture ♦ Planning ♦ Historic Preservation



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The following Area Plans for North East, Happy Creek and Leach Run are proposed as comprehensive plan amendments to the 1997 *Town Plan: Our Vision for Front Royal, Virginia*, adopted in 1998 and amended in February and June, 2000. The purpose of these area plans is to provide updated land use and development information for each of these areas, provide policy recommendations for managing future development and growth, and identify specific action strategies for guiding future land development.

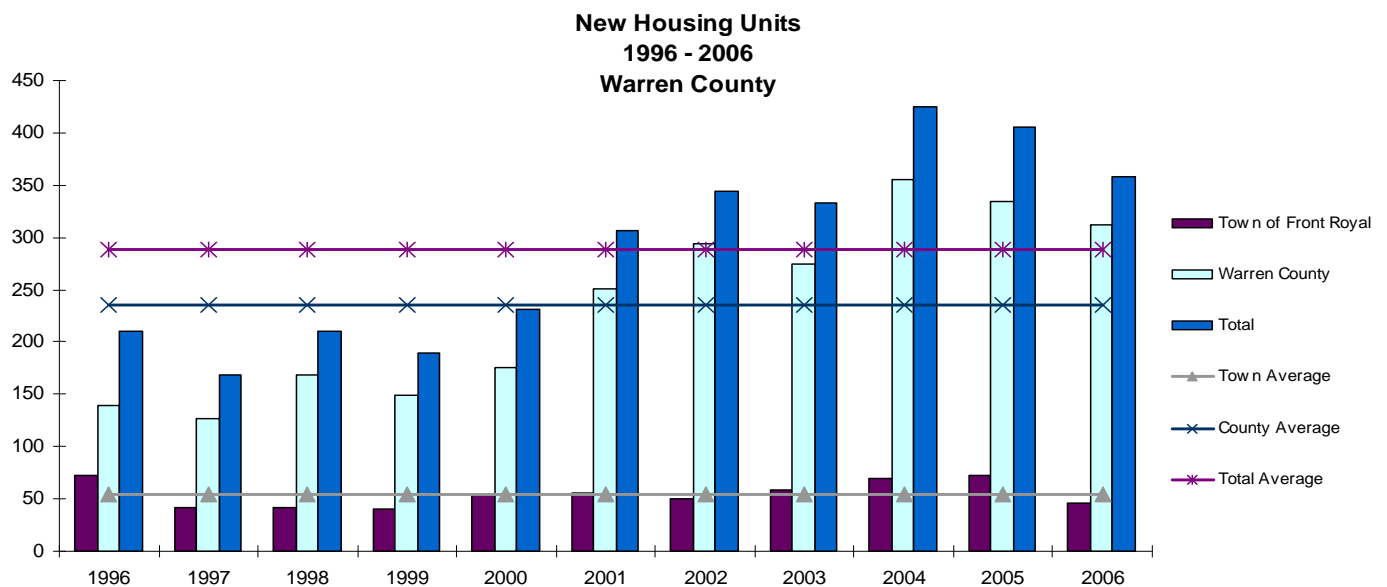
These plans are the final products of land planning and analyses for these areas conducted from January 2006 to July 2007 on behalf of the Town and the Planning Commission.

### Town Population and Housing Growth Trends 2000 – 2025

To understand the need to update the Comprehensive Plan, it is important to consider population and demographic trends in Front Royal and Warren County over the last 10 years. The following paragraphs discuss available population and housing information for the County and Town.

#### County Population and Housing

According to the Warren County Department of Planning, Warren County is experiencing a growth rate of 2-3% per year based on housing permit activity; Weldon Cooper’s growth projections of 1-2% per year have been low. In 2006, the rate was 2.3%, compared with 2.7% in 2005 and 2.9% in 2004. Most of the growth in the County is occurring in the rural areas of the County, particularly in the northeast portion.



	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	Average
<b>Front Royal</b>	72	42	42	40	55	56	50	58	70	72	46	55
<b>Warren County</b>	139	127	169	149	176	251	294	275	355	334	312	235
<b>Total</b>	211	169	211	189	231	307	344	333	425	406	358	289



## Town Population and Housing

In 2000, the population of the Town of Front Royal was reported by the U. S. Census Bureau to be 13,589. According to 2005 population estimates from the Weldon Cooper Center for Public Service, released in June 2006, the town population was 14,499.

Geographic Area	Population Estimates – Weldon Cooper Center (June 2006)						April 1, 2000 Census
	July 1, 2005	July 1, 2004	July 1, 2003	July 1, 2002	July 1, 2001	July 1, 2000	
Front Royal Town	14,499	14,236	14,121	13,937	13,717	13,626	13,589

In analyzing the above chart for new housing in Front Royal, and except for 2006, new housing starts have been trending upward over the last 10 years. Calendar year 2006 housing starts have dropped substantially and predictably in the town, mirroring the slow down in housing starts experienced nationally. It is however anticipated that in another year or two, the upward trend for new housing starts will resume. Accordingly, using an average of 75 units/year (starting in 2009), it is estimated that by 2025, approximately 1400 units will be built in the town.

Based on the new housing starts, and using a 2.4 person per household, the population estimates for the town in 2025 would be close to 18,000.

As noted above, the current statistics were obtained from the Weldon Cooper Center. Other statistics for new housing published by the Northern Shenandoah Valley Regional Commission are higher (up to 10%). Their projected population for Warren County, including the Town of Front Royal, is 48,904 by 2020. The 2005 population used in their report is 34,300, or a 42% increase, in 15 years.

## Surrounding County Population Trends

Other counties in the region are experiencing growth at similar or higher rates. The 2005 population estimates by Weldon Cooper Center for Public Service indicate the following percent changes in population from April 2000 to July 2005:

State/County	% Change in Population 2000-2005
Virginia	8 %
Town Front Royal	6.7 %
Clarke	11.6 %
Fauquier	17.2 %
Frederick	19.2 %
Loudoun	59.0 %
Rappahannock	- 0.8 %
Warren	11.1 %



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### ***Study Areas: Happy Creek, North East, Leach Run***

The Town of Front Royal is experiencing growth pressures for residential development as a result of its location in Northern Virginia and its proximity to the Metropolitan Washington, DC area. Several major housing projects have been proposed in the vicinity of Happy Creek Road in the eastern part of the town which is rural in character with environmentally sensitive lands, narrow roads, and limited public utilities and services. With rapid development pressures, the Town must quickly respond to land use and development proposals that may have an impact on significant environmental features and public facilities and services. An updated plan is needed to address future land use and transportation in the area to assist the Town in effectively managing potential development of vacant land in the Happy Creek Corridor Study Area.

A map of the study area showing the Happy Creek, North East, and Leach Run Planning Areas in relation to the town is presented as Figure 1 on the following page for general reference. In addition, Figure 2 is a composite map of environmental features that are constraints for development. These development constraints include such features as: floodplains, steep slopes, and soils. Further details regarding these features can be found in the January 2007 report titled, *Development Constraints Analysis: Happy Creek Corridor Study Area*.



Figure 1 Happy Creek, North East, and Leach Run Planning Areas



Figure 2 Composite Map of Development Constraints - Happy Creek Corridor Study Area



## Transportation System

The Happy Creek Corridor Study Area is served primarily by North Commerce Avenue, Happy Creek Road, and U. S. Route 55, John Marshall Highway. According to the Virginia Department of Transportation (VDOT) traffic volumes in 2005 were as follows:

- Happy Creek Road at 6<sup>th</sup> Street – 6,400 Average Annual Daily Traffic (AADT)
- John Marshall Highway (Route 55) at South Commerce Avenue – 13,000 AADT
- Commerce Avenue at Happy Creek Road – 14,000 AADT

The Regional 2030 Transportation Plan is now being developed by VDOT. According to the *Front Royal 2020 Area Transportation Study*, prepared in 2000 by VDOT, the following improvements were recommended for these major arterials:

Happy Creek Road - Road widening and intersection improvements are proposed from 6<sup>th</sup> Street to Shenandoah Shores Rd (Route 606). The plan notes that the roadway is classified as R2, a rural, two-lane road with standard shoulders and ditches.

John Marshall Highway – Road widening is proposed to improve the arterial to a four lane, divided roadway from Commerce Avenue to East City limits.

Commerce Street – Turn lane improvements are proposed for Commerce Avenue at the intersections of 2<sup>nd</sup> Street, 3<sup>rd</sup> Street and 6<sup>th</sup> Street.

Leach Run Parkway – A new eastern road connection is proposed to connect John Marshall Highway with Happy Creek Road. It is proposed as a 110-foot wide right-of-way that is classified as U4D (urban four-lane, divided highway with raised median, curb and gutter, sidewalk and protected left turn lanes at selected intersections). It is projected to handle a traffic volume of 5,000 ADT in 2020.

Shenandoah Shores Road (Route 606) – Road geometry improvements are proposed and ultimately a connection is possible for the new Leach Run Parkway and a new interchange at I-66.

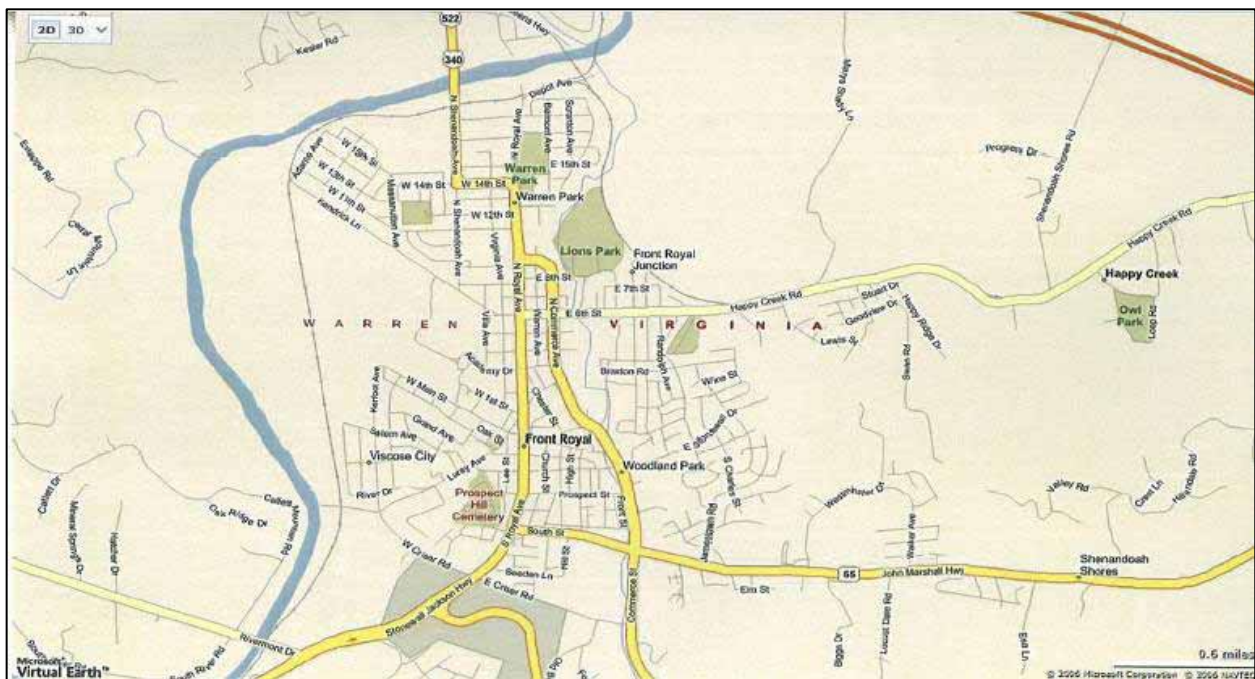
At the present time, Happy Creek Road serves as the primary east-west connector for accessing residential development in the study area. This road is rural in character, winding, and two lanes in width, resulting in many challenges for existing and future residents. The proposed Leach Run Parkway is planned to remove some of the traffic demand on Happy Creek Road, however, its northern connection to Shenandoah Shores Road and ultimately I-66 has additional challenges and will require additional intensive study. While VDOT has a plan to upgrade Happy Creek Road, this project is delayed to 2010 or later. Thus, the road will continue to exhibit challenges due to the natural features and topography of the area. This is compounded by the fact that a major railroad line runs north of and parallel to Happy Creek Road, making safe rail crossings also a major challenge for new development.



The Town of Front Royal is committed to improving its transportation network, including adding multi-modal transportation alternatives such as greenways, bikeways and sidewalks, to enhance the community's overall quality of life. Effective long-range transportation planning and responsible implementation of phased transportation improvements to service public needs and accommodate new development are fundamental to the continued orderly growth and development of the community.

### Transportation Analyses 2007

Transportation studies were conducted in 2007 to develop a baseline traffic simulation model, identify any existing transportation deficiencies, and develop recommendations for transportation improvements. For the purposes of the analyses, the study area included the primary entrance into Front Royal via North Shenandoah Avenue (U.S. Route 340) to John Marshall Highway (U. S. Route 55), and including Royal Avenue, Happy Creek Road and Commerce Avenue. See following map for details of study area.



2007 Transportation Study Area  
Source: Volkert Associates, Inc.



The transportation study considered existing reports and studies including: 1997 Town Comprehensive Plan, 2020 Area Transportation Study, 2005 Happy Creek Regional Transportation Study, 2005 I-66 and Route 606 Interchange Study, 2030 Small Urban Area Transportation Study, and special development project impact studies. In addition, the study conducted field reconnaissance of signals, pavement markings, signs, traffic flow, street lights and sidewalks for all key corridors, and obtained peak hour traffic counts and existing traffic signal timing, as well as accident history. Details of the study, methodology and findings can be found in a separate document, *Long-Range Transportation Study for Happy Creek Corridor Planning Areas, Town of Front Royal*, prepared by Volkert and Associates, dated July 2007.

### Level of Service Conditions 2007

The peak hour traffic volumes at key intersections and the existing level of service (LOS)<sup>1</sup> for each are summarized in the following table. As indicated in the table, most of the intersections are currently operating at an acceptable level of service (C) or better. The intersections at Route 55 (John Marshall Highway) and Westminster Drive and at Route 55 and Commerce Avenue operate with extensive delays (LOS D) in the AM peak hour. In the PM peak hour, the intersection of Route 55 and Commerce Avenue continues to operate with delays, but the intersection of Route 55 and Westminster Drive operates at an acceptable LOS B.

Summary of Existing Intersection Peak Traffic and Levels of Service  
 March 2007

Intersection		AM Peak* 7:45-8:45 AM	Level of Service AM	PM Peak* 4:30-5:30 PM	Level of Service PM
1	RT 55 and Westminster Dr.	1,734	D	1,750	B
2	RT 55 and Commerce Ave	2,577	D	3,317	D
3	RT 55 (South St.) and S. Royal Ave	1,105	B	1,415	C
4	Commerce Ave. and 6th St	1,649	B	1,881	C
5	Commerce Ave. and N. Royal Ave	1,972	B	2,407	C
6	Commerce Ave. and Stonewall Dr.	1,987	B	2,464	B
7	14th St. and Shenandoah Ave.	2,542	C	2,698	C
8	Main St. and Royal Ave	1,088	B	1,057	C
9	Happy Creek Rd and Shenandoah Shores Rd	497	U	683	U
10	Happy Creek Rd. and Meadow La	627	U	633	U

\*Time periods represent the highest peak hour during the morning and evening peak periods.

<sup>1</sup> According to the Federal Highway Administration's Highway Capacity Manual, a level of service "A" represents free traffic flowing conditions; level of service "B" represents a stable flow with a noticeable decline in free flowing conditions; level of service "C" represents a stable traffic flow with a significant increase in driver discomfort; level of service "D" represents high density of traffic, but stable flow; level of service "E" represents at or near capacity; and a level of service "F" represents forced or breakdown of traffic flows.



## Transportation Analysis with Projected Development

Subsequent to the creation of the baseline model and the identification of short-term needed enhancements, modeling was performed for the year 2015 and 2025. Estimated traffic volumes considered future land use projections from undeveloped land in the study area, roadway improvements expected to be complete during that period, and a regional growth of 2% (growth generated by future developments outside the study area and outside the town).

The proposed transportation improvements used in modeling traffic by 2015 and 2025 are described below.

### **Improvements by 2015:**

1. Increased eastbound left-turn storage lane on Route 55 at Westminster Drive and a new left-turn lane from Route 55 onto Richmond Road
2. Connection of William Street to the roads serving the schools
3. Retiming of all signalized intersections
4. Construction of 2 lanes of Leach Run Parkway along with adequate intersection improvements at Route 55 and possibly the installation of a new traffic signal at this location
5. Happy Creek Road improved to Meadow Lane per VDOT's plans, and
6. Construction of a parallel road that ties the Parkway to Westminster Drive.

### **Improvements by 2025:**

1. Widening of Leach Run Parkway to 4 Lanes.
2. Widening of Route 55 to four lanes from Commerce Ave to the town limits.
3. Signal coordination throughout the Town of Front Royal.
4. Happy Creek Road improvements as per plans approved by VDOT.



## Level of Service Summary for 2015 and 2025

Intersection	Existing LOS*		Optimized LOS**		Background***		TOTAL***		Background***		TOTAL***	
	2007	2007	2007	2007	2015	2015	2015	2015	2025	2025	2025	2025
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
	Peak	Peak	Peak	Peak	Peak	Peak	Peak	Peak	Peak	Peak	Peak	Peak
1. John Marshall Hwy. @ Westminster Dr.	D	B	C	B	D	B	D	C	F	D	F	E
2. Rt. 55 (South St.) @ Commerce Ave.	D	D	C	D	D	D	D	D	E	F	E	F
3. Route 55 @ S. Royal St.	B	C	B	B	B	B	B	B	B	C	B	C
4. 6th Street @ Commerce Ave.	B	C	B	B	B	B	B	C	C	C	C	D
5. Commerce Ave. @ Royal Ave.	B	C	B	B	B	C	B	C	C	D	D	F
6. Stonewall Dr. @ Commerce Ave.	B	B	B	B	B	B	B	B	B	B	B	B
7. 14th Street @ Route 340/522	C	C	B	B	B	B	B	B	B	B	C	D
8. Main St. and Rte. 340 (Royal Ave.)	B	C	B	B	B	B	B	B	B	B	C	C
9. Happy Creek @ Leach Run Parkway	U	U	U	U	U	U	B	C	U	U	C	D
10. Leach Run Parkway @ John Marshall Hwy.	N/A	N/A	N/A	N/A	U	U	B	B	U	U	B	C

\* Existing LOS based on signal timing information provided by the Town of Front Royal.  
 \*\* Optimized LOS based on adjustments of "Existing" green time and cycle lengths.  
 \*\*\* "Optimized LOS" used as base model. Road improvements included lengthing the EB left turn lane at Westminster & signal optimization.  
 U: Unsignalized Intersection  
 N/A: Future Intersection

As shown in the above table, with the proposed future land uses and roadway improvements noted earlier, all intersections should operate in an acceptable manner under the year 2015 scenario, with or without the projected land development. However, under year 2025 conditions, the first two intersections (John Marshall Highway at Westminster Street and South Street at Commerce Avenue) would be operating at a "E" and "F" levels of service. In addition, under 2025 future conditions, the intersection of Commerce Avenue and Royal Avenue would operate at level of service "F" during the PM peak hour. Consequently, to improve these 2025 conditions under the proposed future land use scenario for the study area, the following improvements should be considered:

**Intersection #1.** John Marshall Highway at Westminster Drive – Provide an additional eastbound left-turn lane (i.e., dual left). This should result in morning and evening levels of service "D" and "B", respectively.

**Intersection #2.** John Marshall Highway at Commerce Avenue – Provide dual left-turn lanes for the southbound, eastbound, and westbound approaches to accommodate the high turning volumes at this intersection. In addition, provide a separate right-turn lane for the eastbound approach. As a result, the intersection operations during the AM and PM peak hours should improve to level of service "C" and "D", respectively. Alternatively, and in order to minimize potential impacts on adjacent properties, other intersection improvement options which do not require significant right of way acquisition could be considered to achieve acceptable service levels. One of these options could be signal phasing/timing adjustments or reassignment of approach lanes (e.g., changing a through lane to an optional through/left turn lane).

**Intersection #5.** Commerce Avenue at Royal Avenue – Provide an additional southbound left-turn lane to improve traffic operations during peak periods. In addition, provide a receiving/acceleration



lane on Royal Avenue to accommodate heavy westbound right-turn movements. Another alternative would be to add another westbound right-turn lane.

### **Additional Recommended Transportation Improvements**

The transportation study also evaluated existing signals and provided recommendations for improved traffic management. Some of these recommendations are short-term (to be completed within one year), others are long-term and will require further studies and design. For transportation impacts resulting from rezoning and special use permit requests, specific road improvements are included as action strategies for each of the three planning areas. The following general recommendations made by the traffic consultants are:

1. Upgrade traffic signal timing to improve intersection performance. As second step, implement a coordinated traffic signal system to reduce delay and optimize roadway capacity. Obtain traffic counts and update signal timing on a regular basis.
2. Conduct regular maintenance activities (i.e., sidewalks, pavement markings, etc.).
3. Periodically review and analyze accident history.
4. Review the operational impact of the recently-implemented two-way, left-turn center lane along Royal Avenue.
5. Construct a railroad fly-over at the intersection of Route 606 and Happy Creek Road. In the interim, install a traffic signal, if warranted.
6. As discussed earlier in this report, consider implementation of improvements at intersections #1, #2, and #5 to achieve acceptable service levels under year 2025 total traffic volume conditions.
7. Consider construction of Leach Run Parkway to its ultimate section (4 lane divided roadway) up front due to the topography.
8. Develop new guidelines for development traffic impact analysis.
9. Inventory all roadways and improve pedestrian access and circulation (i.e., ADA compliant ramps, additional sidewalks, etc.).
10. Implement safety improvements to reduce accidents.
11. Provide additional streetscape improvements with pedestrian amenities to encourage walking.



12. Program roadway and/or intersection improvements to achieve acceptable service levels within the SynchRO network and identify potential sources of funding (e.g., public funds, private developer proffers, etc.).
13. Consider designating telecommuting facilities throughout Front Royal to promote telecommuting as an alternative to driving to work, particularly for those who have long commutes to their work place. This would be an attractive feature in the Town of Front Royal and serve as an amenity for employees while reducing traffic congestion on local and regional roadway systems and improving air quality.

## New Legislation

In addition, as of July 2007 in the State of Virginia, Warren County is authorized to implement impact fees for transportation improvements. The Town should coordinate with Warren County in the development of the necessary transportation studies, impact fee service areas, and fee structure to assess impact fees to recover costs for transportation improvements required for servicing new development. Guidelines for accepting proffers and disbursing appropriated funds should be prepared and used when considering rezoning applications.

## ***Water and Sewer Infrastructure 2007***

The Town of Front Royal provides water and sewer to commercial, industrial, institutional and residents in Front Royal and to portions of surrounding Warren County as designated in the Town Code and the Water and Sewer Policy.

The Water Treatment Plant is designed as a 3 MGD facility with a net effective capacity of 2.5 MGD. The facility is currently being upgraded to a 6 MGD facility that will be completed in 2008. Based on the planned design capacity for the water treatment plant, it appears that there will be sufficient water supply capacity to handle additional development in the town. As of May 2007, the daily average water production for the town was 2.0 MGD (servicing 5,690 homes and businesses) and the average usage of water per residential customer was 400 gallons per day. Based on the water service provided, the average production for the purposes of waste water treatment equates to 567 gallons per customer per day.

The Wastewater Treatment Plant has a current design capacity of 4.0 MGD. The Wastewater Treatment Plant must be upgraded by 2010 to comply with recently imposed limitations on total discharges of nitrogen and phosphorus into the Shenandoah River. These new limitations are part of the Chesapeake Bay Act requirements currently being implemented throughout the Bay watershed.

A preliminary engineering report is currently underway to determine expansion and /or upgrading requirements to reflect improved water capacity. The report will address the chemical load limitation concerns and will also evaluate future growth impacts on wastewater flows and loads. A plan will be developed to ensure that the plant upgrade will comply with the Chesapeake Bay Waste Load



Allocation. The report will make recommendations for septage receiving and treatment at the Plant. Evaluation of the existing facilities and recommendations for replacements and upgrades of equipment and or structures is also part of the report. Inflow/Infiltration will be evaluated along with current and projected flows to determine the scheduling for building additional capacity in the wastewater treatment facilities. The report will research funding sources through grants and state loan programs to implement the plan of action.

<b>Water and Waste Water Facilities: Summary Information</b>		
	<b>2007 Plant Design Capacity</b>	<b>Usage May 2007</b>
Water	3 MGD, expansion to 6 MGD	2.0 MGD
Waste Water	4 MGD	3.4 MGD



## Happy Creek Planning Area

The Happy Creek Planning Area includes approximately 665 acres of land. It consists primarily of residential development with commercial businesses on the western perimeter along Commerce Avenue and the southern perimeter along John Marshall Highway. The northern part of the planning area contains the Front Royal Municipal Park Complex (approximately 60 acres) with picnic areas, swimming pool, Bing Crosby Stadium, softball field, tennis, and other sports facilities. The Leslie Fox Keyser Elementary School is located in the eastern portion of the planning area at the end of Stonewall Drive.

The planning area's residential neighborhoods consist of 1950s established neighborhoods and newer, more suburban residential development constructed in the 1970s. Much of the area's single-family residences are constructed on lots ranging in size from 7,500 to 10,000 square feet. Today, most of the Happy Creek Planning Area is built out, allowing for isolated opportunities for infill development. The exception is the far eastern perimeter which includes vacant properties with topographic challenges associated with the floodplains or steep slopes. The existing land use in this planning area is shown in Figure 3. The average built residential density in the planning area as of December 2006 was 3.85 dwelling units per acre.

### **Happy Creek Planning Area: Community Assets**

Community assets that should be considered in planning for this area include the following:

- The Happy Creek Planning Area consists of desirable residential neighborhoods with a diverse range of housing styles and values that are in close proximity to downtown, recreation facilities, and local schools.
- At higher elevations, the topography of this planning area provides dramatic views of the surrounding mountains and landscape. These elevated features contribute to the scenic vistas characteristic of Front Royal. At lower elevations, the landscape includes features such as streams, ponds, and open floodplains.

### **Happy Creek Planning Area: Community Challenges**

Community challenges that should be considered in planning for this area include the following:

- The Happy Creek Planning Area was initially developed using a traditional, connected street grid pattern that allowed good traffic flow along neighborhood streets. As more subdivisions developed, the neighborhoods included curved streets with cul-de-sacs that limited connectivity for through-traffic, but created more desirable residential environments. Additional street connections are needed to provide an enhanced transportation network for the planning area and the larger community. In particular an east-west and north-south connection is needed between Happy Creek Road and John Marshall Highway. The existing street development pattern may not be adapted easily to provide greater connectivity between community facilities and other neighborhoods.



- The eastern portion of the Happy Creek Planning Area exhibits steep topography with slopes of 20% or more. Soils, rock and steep grade changes present challenges for development.
- The western portion of the planning area is a floodplain, creating limitations for both residential and commercial development.

### ***Happy Creek Planning Area: Future Land Use***

A Future Land Use Map for Happy Creek Planning Area is presented on the following page. The future land use map was developed by considering: existing land use and development patterns, development constraints (steep slopes, floodplains, soils, infrastructure, etc.), adopted plans, desired development patterns, and other factors. The following future land uses are recommended for the Happy Creek Planning Area:

#### **Medium Density Residential**

This medium density residential category is recommended for much of the already developed Happy Creek Planning Area. This residential category would include the following land uses and development patterns:

- Single-family residences
- Recommended density for these areas: 2-4 dwelling unit/acre for single-family.

#### ***Planning Rationale:***

1. The proposed density reflects the density and lot sizes in the existing neighborhoods.
2. For infill and redevelopment, new proposals should reflect existing single family patterns.



**Figure 3 Happy Creek Planning Area Existing Land Use Map**



### **Low Density Residential, Clustered**

This low density residential land use category is recommended for several contiguous areas in the Happy Creek Planning Area. These areas are very constrained by natural features or contain features that should be preserved. If development occurs, careful thought should be given to environmental protection and the development pattern. Good site planning is essential. This residential category would include the following land uses and development patterns:

- Single-family residential uses that are clustered to minimize impacts on natural features such as floodplains and steep slopes.
- Lot sizes may vary, but the overall clustered development density should not be greater than 1-2 dwelling units per acre.

#### *Planning Rationale:*

1. The planning area contains steep slopes that constrain development.
2. The planning area contains floodplains that constrain development.
3. There is very limited access to these isolated areas.
4. Many of these properties contain attractive environmental features that should be preserved and integrated with development.

### **Office/Commercial**

Light commercial and office redevelopment opportunities are recommended along John Marshall Highway and Commerce Avenue. This commercial category would include small businesses (professional office, doctor/dentist, personal/business services, etc.) and retail development, taking into consideration the floodplain constraints. Big box retailers are discouraged.

#### *Planning Rationale:*

Small business development and retail commercial already exists in this location.

### **Planned Industrial/Business**

Planned Industrial/Business is recommended for the Happy Creek Planning Area for two areas in the vicinity of 6<sup>th</sup> Street and Commerce Avenue. This industrial/commercial category would include the following land uses and development patterns:

- Environmentally friendly businesses (i.e., small manufacturing operations, corporate headquarters, technology businesses, etc.)
- There should be established criteria for site development, outdoor storage, residential buffers, etc. (Note: The existing Zoning Ordinance provides for a wide diversity of uses in I-1 and I-2. There should be a Planned Business/Industrial District.)

#### *Planning Rationale:*

1. Currently, these are developed for industry.



2. Industrial/Business development provides a good economic base for the Town and the County; it provides employment opportunities and requires fewer public services than residential development.

**Public/Civic/Institutional**

The Happy Creek Planning Area contains an elementary school and public buildings. This land use category would include the following uses and development patterns:

- Government and public buildings (e.g., schools, libraries, fire stations, utility facilities, etc.)
- Churches
- Civic organization buildings
- Development would be in accordance with an adopted Master Plan that establishes the configuration of and the land uses associated with the particular facility or institution.



**Figure 4 Happy Creek Planning Area Future Land Use Map**



### Happy Creek Planning Area: Undeveloped / Underdeveloped Land

A map of the vacant and underdeveloped land in the Happy Creek Planning Area that potentially could be developed in the future is shown in Figure 5. This figure includes vacant land parcels of 5 acres or more, which have the potential to be developed. A more detailed chart showing the recommended future land use, specific vacant land acreages, and their characteristic features is presented below. Based on the calculated vacant land acreages for the Happy Creek Planning Area, only 67 acres of the potentially available 103 acres is not affected by floodplain or steep slope limitations. Acreage that is potentially available is mostly recommended for low-density residential development that can be clustered to minimize impact on sensitive environmental features. In addition, approximately 3.8 acres of already zoned commercial land is expected to develop.

Happy Creek Planning Area: Undeveloped / Underdeveloped Land					
Potential Land Use	Undeveloped* Acreage	Percentage of Undeveloped Land	Acreage in Floodplain	Acreage in Steep Slopes (>25%)	Total Developable Acreage**
Residential estate					
Low-Density Residential, Cluster	101	98.1%	16	18	67
Medium-Density Residential	2	1.9%	0	0	0
High-Density Residential					
Planned Residential					
Civic/ Institutional					
Public					
Office/ Commercial					
Neighborhood Commercial					
Retail Commercial					
Recreational					
Planned Industrial/ Business					
<b>Total Land Use</b>	<b>103</b>	<b>100.0%</b>	<b>16</b>	<b>18</b>	<b>67</b>

\* Note: Undeveloped lands also include parcels that are large lots over five acres in size that could be developed more intensely.  
 \*\* Note: This figure subtracts floodplain areas and steep slopes greater than 25%. Overlaps exist between areas floodplain and steep slopes, but these overlaps are minor in the overall calculations.



**Figure 5 Happy Creek Planning Area Undeveloped Land**



## **Happy Creek Planning Area: Land Use and Development Policies and Action Strategies**

In addition to the goals and development policies set forth in other sections of the Comprehensive Plan, the following land use and development policies and action strategies shall apply to new development and redevelopment in the Happy Creek Planning Area.

### **Natural Environment and Unique Features**

The Happy Creek Planning Area contains many environmental and scenic resources that are important community assets for the Town of Front Royal as the gateway to the Virginia Skyline Drive and Shenandoah National Park. These resources include woodlands, ridges, scenic vistas, and floodplains. While much of the Happy Creek Planning Area is already developed, there are some eastern areas that require special attention if developed.

#### Policy:

1. Natural and unique features located within the Happy Creek Planning Area should be protected to ensure the continued social and economic sustainability of the community.

#### Action Strategies:

- |                |   |
|----------------|---|
| <b>HC-EN 1</b> | New development proposals shall consider environmental resources during planning and design and shall make special efforts to minimize the loss of woodlands and avoid development within floodplains or on slopes greater than 15 percent.   |
| <b>HC-EN 2</b> | New development proposals shall consider soil constraints in project planning and design (e.g., highly permeable soils, erosive soils) and include applicable studies and mitigation measures with an application for development.  |
| <b>HC-EN 3</b> | New development proposals shall consider wildlife habitats in project planning and include measures to enhance stream corridors and other natural areas for wildlife.   |
| <b>HC-EN 4</b> | New development proposals shall consider existing trees in project planning and preserve them to the extent feasible. New trees shall be planted along all new streets and within new developments.   |
| <b>HC-EN 5</b> | Natural and unique features such as key mountain vistas and important open spaces should be identified and a conservation plan developed to encourage protection through proffers, property acquisition and other applicable methods (i.e., conservation easements).  |
| <b>HC-EN 6</b> | The subdivision ordinance should be revised to add provisions for improved guidelines for clustered subdivisions permitted by-right. The zoning ordinance should be revised to add a new district that allows increased residential density in exchange for clustering development that preserves natural features. |



## Housing and Neighborhoods

The Town of Front Royal is recognized for its quiet neighborhoods, historic character, and its scenic environmental qualities. The Happy Creek Planning Area is mostly built-out, but offers opportunities for sensitive, infill development.

### Policy:

Development in the Happy Creek Planning Area should enhance the existing residential neighborhoods and complement existing environmental features as identified above.

### Action Strategies:

- HC-HN 1** New development proposals shall include land conservation planning and environmental design principles into proposed projects. Examples of appropriate approaches include clustered development, greenways, wildlife preserves, landscaped gateways, common public open space or recreational areas, night-sky friendly lighting, etc.
- HC-HN 2** The Subdivision Ordinance, *Optional Open Space Subdivision*, should be revised to encourage quality clustered residential development that preserves open space and protects environmental features. Revisions should include additional statement of public purpose, definition of contributing environmental features, increased incentives for clustering development, revised design considerations, and revised development and open space standards.
- HC-HN 3** New residential development proposals shall include pedestrian facilities such as sidewalks and trails. Facilities should be linked with other neighborhoods and existing/planned trails.
- HC-HN 4** New residential infill development proposals shall be consistent in lot size, density and character with the surrounding neighborhood to maintain a harmonious community.

## Transportation and Infrastructure

Because the Happy Creek Planning Area is mostly built-out, the transportation network is well established. However, additional transportation connections are recommended to provide improved connections between the Happy Creek Planning Area and the Leach Run Planning Area. In addition, intersection improvements may be necessitated by the increased growth within the area and in the surrounding areas.

### Policies:

1. A connected transportation network is fundamental to sustaining residential neighborhoods, providing quality access to community facilities, and effectively managing vehicular traffic in Front Royal.



2. Neighborhoods should have roads that provide several alternative access points in order to provide community connectivity, and safe, effective traffic management. Neighborhood roads should connect with a larger network of local and collector roads to access public facilities and other parts of the community.
3. Multimodal facilities (vehicular, pedestrian, and/or bicycle) should be considered for all roads in Front Royal.

Action Strategies:

- HC-TI 1** Traffic signals in the planning area should be timed appropriately and coordinated with others in town to enhance vehicular movements and improve the level of service.
- HC-TI 2** A new east-west connector road should be provided between Happy Creek Road and John Marshall Highway in an appropriate location (possibly a William Street extension) to relieve congestion on Happy Creek Road and provide improved access for schools and better connectivity between Commerce Avenue and the proposed Leach Run Parkway.
- HC-TI 3** New roadway alignments shall be sensitive to natural and unique environmental features, and to existing development patterns.
- HC-T4** New development proposals which affect the John Marshall Highway and Commerce Avenue intersection must address the need for dual left turn lanes or other alternatives to maintain the LOS at C or better.
- HC-TI 5** New development proposals shall include multi-modal transportation alternatives in the design of the project. Examples may include sidewalks, bike lanes/trails, and public transportation options. For established neighborhoods, multi-modal facilities should be considered only where feasible. Proposals shall integrate connections for planned bicycle paths along Happy Creek Road, John Marshall Highway and Leach Run Parkway as identified in the Town's adopted plan, *Where the Mountains Meet the River: Front Royal's Plan for Parks, Trails, Bike Paths and Greenways*. Telecommuting facilities should be considered where feasible.
- HC-TI 6** New development proposals shall be designed with inter-connected streets (internal and external to the development) to maximize access routes and provide expanded connectivity between neighborhoods.
- HC-TI 7** Happy Creek Road should be improved to safely handle increasing traffic volumes; improvements should maintain the environmental character of the area and should include provisions for bicycles (either in the form of a dedicated bike lane, expanded shoulders, or bike route signage). Intersection improvements are recommended at Lewis Street and Meadow Lane in conjunction with development proposals.
- HC-TI 8** The intersection of Commerce Avenue and Stonewall Road should be studied for



potential improvements, once the William Street extension is ready to be constructed.

**HC-TI 9**

Maintain transportation corridors and undertake recommended transportation improvements on an annual basis. Maintain sidewalks and pavement markings.

**HC-TI 10**

The Town should enhance pedestrian access and circulation by conducting an inventory of pedestrian facilities on roads in the Happy Creek Planning Area (sidewalks, ADA compliance, etc.) and adding new sidewalks where appropriate and feasible.

**HC-TI 11**

The Town should create a left-turn lane either on Richmond Street or Jamestown Road to minimize backup on John Marshall Highway until such time that John Marshall Highway is constructed to its ultimate design.

**HC-TI 12**

A dual left turn lane at the intersection of John Marshall Highway with Westminster Drive will be necessary with proposed developments adding traffic at this intersection.

## Open Space and Parks

Open spaces, greenways and parks are important community features that contribute to the quality of life for residents and businesses. Regional recreational facilities are located at Bing Crosby Park near Commerce Avenue and 8<sup>th</sup> Street in the Happy Creek Planning Area. The 1994 Front Royal Parks Plan designated greenway connections along the Leach Run stream corridors; trail connections were proposed between neighborhoods and the neighborhood schools. There are currently no public neighborhood parks in the Happy Creek Planning Area.

### Policies:

1. Scenic vistas, open spaces and natural recreational spaces are important community features that contribute to the quality of life in Front Royal. They should be conserved and preserved for their social, economic and environmental benefits to both residents and visitors.
2. Neighborhoods should be served by both private and public amenities that create an adequate network of active and passive recreational facilities.

### Action Strategies:

**HC -OSP 1** New development shall coordinate proposed plans with adopted recreational plans and include connections and linkages to planned facilities. Where appropriate, consider accepting proffers as a way to implement the Town's plan for a trail connecting Commerce Avenue to Bing Crosby Stadium.

**HC- OSP 2** Work with Warren County to enable use of school recreational facilities by community residents when not in use for school functions.



## Economic Development

The western perimeter of the Happy Creek Planning Area is a commercial corridor. It serves as an entrance into town and an entrance to established residential neighborhoods. Its appearance and vitality is important to the continued sustainability of the adjacent residential development.

### Policies:

1. New business development should be undertaken in a planned manner that is environmentally sensitive and compatible with surrounding land uses.

### Action Strategies:

- HC-ED 1** New development on Commerce Avenue and John Marshall Highway should enhance the gateway corridor through landscaping, site design, and architecture.
- HC-ED 2** Existing buildings and properties should be maintained to enhance the gateway corridor.
- HC-ED 3** New commercial development should be encouraged to provide ample parking on site to minimize parking on collector roads.



## North East Planning Area

The North East Planning Area consists of approximately 915 acres of land. It is largely undeveloped, but includes the Town's wastewater treatment plant and two business/industrial parks. Most of the land is open pasture and farmland with scattered residential development. The far eastern perimeter of the planning area includes the Happy Creek Technology Park and the HIPP Business Park. The Happy Creek Technology Park is designated as a technology zone.



The planning area is served primarily by Happy Creek Road and by Shenandoah Shores Road (Route 606). Both roads are narrow, rural in character, with numerous twists and turns. A main service railroad line operated by the Norfolk-Southern Railroad runs parallel to Happy Creek Road. This linear railroad corridor presents development limitations for the planning area; the existing vehicular crossings are at grade, and access is restricted for any new road connections.

In recent years, a second interchange on I-66 for Front Royal has been discussed near its crossing with Shenandoah Shores Road. If permitted by the Federal Highway Administration, improvements to Shenandoah Shores Road would be required, including a probable above-grade crossing over the railroad and Happy Creek Road and a connection to the planned Leach Run Parkway. Much additional study is needed to determine the feasibility of such an interchange and associated improvements. It is expected that these improvements would not be implemented within the next twenty years; consequently, this comprehensive plan amendment does not include the additional I-66 interchange as a future land use planning factor.

The existing land use in this planning area is shown in Figure 6. The average built residential density in the North East Planning Area as of December 2006, was 0.14 dwelling units per acre.



**Figure 6 North East Planning Area Existing Land Use**



## North East Planning Area: Community Assets

Community assets that should be considered in planning for this area include the following:

- The North East Planning Area is traditionally an agricultural area that is rich in prime agricultural and important farmland soils.
- The topography of the North East Planning Area provides dramatic vistas of Front Royal and the mountain ridges of the Shenandoah Valley.
- The North East Planning Area has few development constraints with respect to steep slopes, floodplains or poor soils.
- This planning area offers significant open space for the community; its rural, pastoral setting is valued by residents of Front Royal.
- There is vacant, industrially zoned land in this planning area that can be marketed for economic development to provide new employment opportunities and improve the overall tax base for Front Royal.



## North East Planning Area: Community Challenges

Community challenges that should be considered in planning for this area include the following:

- An active, primary railroad line runs parallel to Happy Creek Road. This rail corridor presents significant limitations for access to vacant land in the North East Planning Area and for safe crossing of the railroad.
- Happy Creek Road and Shenandoah Shores Road are narrow, winding roads that have limited capacity to handle large volumes of traffic. In many instances, the existing road corridors are restricted for improvements by natural topography, by existing development, and the railroad corridor.
- There is significant vacant land in Warren County abutting this area; however the only access is from Southern Shores Road and Happy Creek Road.





## **North East Planning Area: Future Land Use**

A Future Land Use Map for the North East Planning Area is presented on the following page. To implement the recommended land use and development policies and action strategies for the North East Planning Area, the following future land uses are established:

### **Residential Estate/Agriculture**

This very low density land use category is recommended for a major portion of the North East Planning Area. This land use category would include the following uses and development patterns:

- Typical uses would be farmland and single-family development on large lots and estates.
- The minimum acreage is one acre.
- The recommended density is one dwelling unit/10 acres (agriculture) to 1 dwelling unit/acre (residential estate).

#### *Planning Rationale:*

1. An active railroad line runs parallel to Happy Creek Road and is a limiting factor for future development. The at-grade crossings do not provide good and safe access.
2. Only one road Shenandoah Shores Road serves the area.
3. There is limited supporting infrastructure in this area. Main water and sewer lines are available to the industrial park and the Village Court subdivision off of Shenandoah Shores Road.
4. Soils in this area are particularly suited to agriculture.
5. Topography of this area is at a higher elevation than surrounding areas, creating scenic vistas that should be preserved for both social and economic reasons.

### **Medium Density Residential**

This medium density residential land use category is recommended for a small area in the North East Planning Area east of Shenandoah Shores Road.

- Typical land use is single-family residential.
- Lots size may vary, but the overall development density should not be greater than 2-4 DU/Acre.

#### *Planning Rationale:*

1. The existing railroad track limits access to the area
2. Existing zoning and development surrounded by industrial/office development.



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**Figure 7 North East Planning Area Future Land Use Map**



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### **Planned Industrial/Business**

Planned Industrial/Business land uses are recommended for the North East Planning Area where two industrial parks already exist and another is zoned east of Shenandoah Shores Road.

- Appropriate land uses are environmentally friendly businesses (i.e., small manufacturing operations, corporate headquarters, technology businesses, etc.).
- There should be established criteria for site development, outdoor storage, residential buffers, etc. The existing Zoning Ordinance provides for a wide diversity of uses in I-1 and I-2 Industrial zoning districts. There should be a Planned Business/Industrial District which encourages appropriate office and business uses and prohibits heavy manufacturing.

#### *Planning Rationale:*

1. While access is challenged and requires crossing of the railroad near Happy Creek Road, low traffic industrial uses are preferable to residential uses.
2. Industrial/Business development provides a good economic base for the Town and the County; it provides employment opportunities and requires fewer public services than residential development.



### North East Planning Area: Undeveloped / Underdeveloped Land

A map of the vacant and underdeveloped land in the North East Planning Area that potentially could be developed in the future is shown in Figure 8. This figure includes vacant land parcels of 5 acres or more, which have the potential to be developed. A more detailed chart showing the recommended future land use, specific vacant land acreages, and their characteristic features is presented below. Based on the calculated vacant land acreages for the North East Planning Area, approximately 691 acres of the available 799 acres are not affected by steep slopes or floodplains. Approximately 400 acres of the 691 acres available are targeted for low density residential development and 292 acres are targeted for planned business/industry.

North East Planning Area: Undeveloped / Underdeveloped Land					
Potential Land Use	Undeveloped Acreage*	Percentage of Undeveloped Land	Acreage in Floodplain	Acreage in Steep Slopes (>25%)	Total Developable Acreage**
Residential estate	502	57.8%	68	34	399
Low-Density Residential, Cluster					
Medium-Density Residential					
High-Density Residential					
Planned Residential					
Civic/ Institutional					
Public					
Office/ Commercial					
Neighborhood Commercial					
Retail Commercial					
Recreational					
Planned Industrial/ Business	297	37.2%	0	5	292
<b>Total Land Use</b>	<b>799</b>	<b>100.0%</b>	<b>68</b>	<b>39</b>	<b>691</b>
* Undeveloped lands also include parcels that are large lots over five acres in size that could be developed more intensely. **Subtracts Floodplain Areas and Steep Slopes greater than 25%. Overlaps exist between areas of Floodplain and Steep Slopes, but these overlaps are minor in the overall calculations.					



**Figure 8 North East Planning Area Undeveloped Land**



## **North East Planning Area: Land Use and Development Policies and Action Strategies**

In addition to the goals and development policies set forth in other sections of the Comprehensive Plan, the following land use and development policies and action strategies shall apply to new development in the North East Planning Area.

### **Natural Environment and Unique Features**

The North East Planning Area contains many open farmland and scenic vistas that are important community assets for the Town of Front Royal.

#### Policies:

1. Natural and unique features located within the North East Planning Area should be protected to ensure the continued social and economic sustainability of the community.
2. The rural, farmland heritage of Front Royal is important to the community and the region. Significant areas of prime agricultural soils located in the North East Planning Area should be protected and retained for agriculture where feasible, by clustering development.

#### Action Strategies:

- NE-EN 1** New development proposals shall consider environmental resources during planning and design and shall make special efforts to minimize the loss of trees, and avoid development within the town's floodplains or on slopes greater than 15 percent.
- NE-EN 2** New development proposals shall consider prime agricultural lands and integrate their preservation into project design. This may be accomplished through project site design, clustered development, community open space or other methods.
- NE-EN 3** Natural and unique features such as key mountain vistas and important open spaces should be identified through a visual simulation analyses and a conservation plan developed to encourage protection through property acquisition and other applicable methods (i.e., conservation easements).
- NE-EN 4** Section 148-43 of Front Royal's Subdivision Ordinance, *Preservation of Natural Features*, addresses the preservation of natural features in new subdivision development. The section should be revised to include more specific provisions regarding the public purpose of preserving these features, how these features should be identified, how preservation should be accomplished, and what submission requirements must be met for a subdivision application.
- NE-EN 5** Following the adoption of the Comprehensive Plan Amendment, the Zoning Ordinance should be amended to include a rural cluster provision which allows large lots, but reduces setbacks and by Special Use Permit, allows for increased density if



development maintains a rural setting.

- NE-EN 6** The Town should review its Floodplain “overlay” Zone and consider adding additional provisions to protect floodplains and stream corridors. Riparian buffer zones may be beneficial to both the natural environment and water quality.

## Housing and Neighborhoods

The North East Planning Area offers significant views of Front Royal, open space, and vacant land. Additional community growth and expansion in this planning area should carefully plan for the preservation and integration of these resources in any development plan. Given the limited transportation access to much of this planning area, any new development must be carefully evaluated to ensure safe, adequate access to major roads.

### Policies:

1. Development in the North East Planning Areas should enhance the town’s quality of life and complement its attractive environmental features.

### Action Strategies:

- NE-HN 1** Priority should be given to reviewing and revising the Residential Estate Zoning district to include provisions that will enhance large lot subdivisions and encourage protection of environmental features and open space.

## Transportation and Infrastructure

The North East Planning Area presents significant challenges for expanding transportation and infrastructure for new development. Because of these challenges and the extended timeframe associated with any new transportation improvements and alternatives, this plan amendment recommends very low-density development for a majority of the planning area.

### Policies:

1. The cost of transportation and infrastructure improvements to accommodate new development shall be equitably shared by public and private interests utilizing and benefiting from the facilities.
2. Development and growth shall be managed in accordance with adopted plans and phased infrastructure improvements so as to not overburden facilities or impair acceptable levels of service.
3. Transportation and infrastructure planning is both a Town and a regional matter that requires careful coordination and cooperation to ensure that new development and needed improvements are comprehensively studied, phased and implemented in the best manner to protect the public health, welfare and safety.



Action Strategies:

- NE-TI 1** To provide for safe and efficient access in the North East Planning Area, alternatives to the at-grade railroad crossings along Happy Creek Road must be considered. The Town should coordinate with VDOT and consider improvements to the Shenandoah Shores Road particularly at its intersection with Happy Creek Road, in conjunction with the construction of Leach Run Parkway. The Town should also study the potential for a new east-west connector that connects Shenandoah Shores Road to the Town.
- NE-TI 2** Happy Creek Road should be improved to safely handle increasing traffic volumes; improvements should maintain the environmental character of the area and should include provisions for bicycles (either in the form of a dedicated bike lane, expanded shoulders, or bike route signage). Intersection improvements should be undertaken at Lewis Street and Meadow Lane.
- NE-TI 3** New development proposals shall be consistent with adopted transportation plans and recommended phasing for improvements and new facilities.
- NE-TI 4** Roadway alignments for new development shall be sensitive to natural and unique environmental features.
- NE-TI 5** New development proposals shall include multi-modal transportation alternatives in the design of the project. Examples may include sidewalks, bike lanes/trails, greenways, public transportation options and telecommuting facilities, if appropriate. Proposals shall integrate connections for planned bicycle paths along Happy Creek Road.
- NE-TI 6** New development shall identify the existing level of service for transportation corridors and supporting infrastructure and shall not reduce service capacity below acceptable levels. For transportation corridors and intersections, the level of service shall be maintained at a level of “C” or higher. New development proposals shall include appropriate transportation measures to maintain the desired level of service. The traffic impact analysis shall be provided using the SyncRo Traffic Generation Model which has been used to develop town transportation information.
- NE-TI 7** Where applicable and in conjunction with an adopted transportation plan and established system of impact fees, new development should participate in transportation impact fees to recover costs for public transportation improvements.

## Open Space and Parks

The North East Planning Area provides significant open space opportunities and views of the natural landscapes and skyline of Front Royal. These features add to the quality of life for residents and businesses located within the North East Planning Area, and the town as a whole.



Policy:

Scenic vistas, open spaces and natural recreational spaces are important community features that contribute to the quality of life in Front Royal. They should be conserved and preserved for their social, economic and environmental benefits to both residents and visitors.

Action Strategies:

- NE-OSP 1** New development shall coordinate proposed plans with adopted recreational plans and include connections and linkages to planned facilities.
- NE-OSP 2** Open space easements should be pursued for properties identified as significantly contributing to scenic vistas, important natural areas, prime agricultural land, or other environmental feature.

## Economic Development

The eastern portion of the North East Planning Area has been targeted for industrial development and is largely undeveloped. The HIPP Business Park and Happy Creek Technology Park, owned by the Front Royal-Warren County Economic Development Authority, are located on the western side of Shenandoah Shores Road. Additional industrially-zoned property is located on the eastern side of Shenandoah Shores Road. Future connections with Leach Run Parkway make these areas attractive for economic development; a possible interchange at I-66 and Shenandoah Shores Road would enhance the desirability of developing these areas for business and industry.

Existing zoning provisions for industrial development provide for a wide variety of uses with few development guidelines. Given the environmental integrity of the North East Planning Area and the transportation challenges, planned business and industrial development will be very important in the future growth of these areas and in preserving those special features that contribute to the quality of life for all residents and businesses of Front Royal.

Policies:

1. Economic development should be undertaken in a planned manner that is environmentally sensitive and compatible with surrounding land uses.
2. New economic development initiatives for business/industrial parks should be in accordance with a comprehensive master plan that includes high standards for development and recommended design guidelines for buildings, parking, landscaping, signage, etc.



Action Strategies:

- NE-ED 1** The Town's zoning ordinance should be amended to include a Planned Business/Industrial category with appropriate land uses and design/development standards.
- NE-ED 2** New industrial/business parks in the North East Planning Area shall consider important environmental resources in land development and include appropriate traffic/transportation analyses to ensure safe access and an efficient level of service.
- NE-ED 3** Shenandoah Shores Road should be improved between Happy Creek Road and the Happy Creek industrial parks to facilitate safe access for new business development. Recommended improvements shall be coordinated with VDOT and their priority identified in the Town's transportation plan.

Public Services

This plan amendment recommends low density development in the North East Planning Area. Future development in the North East Planning Area may require extensions of public services such as utilities for water, sewer, electricity, telephone, and other similar services.

Policies:

1. New development shall "pay its own way" for public services required to meet the needs of such development.
2. Public services and facilities shall be provided in accordance with the Town's adopted Capital Improvement Plan.

Action Strategies:

- NE-PS 1** New development proposals shall consider effects on public services and facilities and shall provide supporting documentation of impacts with development applications. New development should participate in the cost of providing facilities.
- NE-PS 2** Utility lines for electricity, telephone, cable, etc. in new developments shall be located underground.
- NE-PS 3** The Town should revise its subdivision ordinance to include a provision requiring new development to pay a pro-rata cost share of reasonable and necessary off premise water and sewerage facilities where the subject development necessitates or requires improvements and there is an adopted improvement program/plan.
- NE-PS4** New development proposals shall address the needed improvements to public facilities in accordance with Front Royal's Fiscal Impact Model.
- NE-PS 5** New development proposals should contribute to the adopted Infiltration/Inflow Mitigation Plan until such time as the increased capacity is available in the wastewater treatment plant.



## Leach Run Planning Area

The Leach Run Planning Area consists of approximately 915 acres of land. The planning area is characterized by both rural landscapes and suburban, residential development. Most of the development in the planning area exists near Happy Creek Road in the north and John Marshall Highway in the south. The Leach Run Planning Area has undergone rapid subdivision development in recent years. Its rolling landscape and views of Front Royal offer desirable amenities for new and existing residents. Recently, two schools were constructed in the area on property previously reserved for a community park. The average built residential density in Leach Run as of December 2006 was 1.05 dwelling units per acre.

The Leach Run Planning Area has a lot of potential for new residential development in Front Royal; however, it also has many environmental features and constraints that must be appropriately considered. It is essential that any new development be carefully designed to include environmental protection, community amenities, and sound land planning principles. Continued development that proposes a conventional subdivision approach will not achieve the desired community form that is envisioned for Front Royal.

The existing land use in the Leach Run Planning Area is shown in Figure 9.

### ***Leach Run Planning Area: Community Assets***

Community assets that should be considered in planning for this area include the following:

- A large portion of this planning area is undeveloped, allowing opportunities for managed growth that is planned and designed to enhance the environmental qualities of the area.
- The Leach Run Planning Area contains scenic vistas and a diversity of environmental features – rolling landscapes, woodlands, cliffs, streams, and floodplains.
- Recent subdivision developments in the planning area offer desirable, new single-family homes for new and existing residents.
- The new schools in the Leach Run Planning Area are in close proximity to new residential neighborhoods. School recreational facilities may be a resource for neighborhood residents.
- The woodlands, streams and floodplains of the planning area offer opportunities for wildlife corridors and recreational trails.
- The topography of Leach Run Planning Area offers dramatic views of the rolling landscape.



**Figure 9 Leach Run Planning Area Existing Land Use Map**



## **Leach Run Planning Area: Community Challenges**

Community challenges that should be considered in planning for this area include the following:

- John Marshall Highway and Happy Creek Road are the only major road corridors in the planning area. There is only one major north-south connection (Commerce Avenue) between the two corridors.
- The north side of John Marshall Highway in the vicinity of Lake Avenue includes mobile homes and residences that are in need of either rehabilitation and/or redevelopment.
- Leach Run Parkway is planned as a new controlled access north-south connector. As of May 2007, only the preliminary design has been completed and 25% of the right-of-way has been acquired between John Marshall Highway and Happy Creek Road.
- Utility lines for water, sewer, and electricity are not extended to a majority of the vacant land. Main lines run along Happy Creek Road and John Marshall Highway.
- Many of the soils in this planning area are categorized by the U.S.D.A. Natural Resources Conservation Service as being very limited for development. There are a variety of soil types in the Leach Run area, each with specific characteristics, which should be studied in greater detail before pursuing development.
- Leach Run, a tributary to the Shenandoah River, runs through the planning area, becoming extensively branched as it approaches John Marshall Highway. Floodplains constrain development in the planning area, especially in the southern portion.
- The topography of the Leach Run Planning Area is highly variable, exhibiting many steep ridges, lowlands, and valleys.

## **Leach Run Planning Area: Future Land Use**

A Future Land Use Map for the Leach Run Planning Area is presented as Figure 10. Based on the existing and potential development patterns and future opportunities, the following future land use categories are proposed as a guide for future development. Each of these categories is briefly described below followed by a summary of the rationale for designating specific areas.

### **Low Density Residential, Clustered**

This low density residential land use category is recommended for several areas in the Leach Run Planning Area. These areas are very constrained by natural features that should be preserved. If development occurs, careful thought should be given to environmental protection and the development pattern. Good site planning is essential. This residential category would include the following land uses and development patterns:

- Typical land uses may be single-family residential uses that are clustered to minimize impacts on natural features such as floodplains and steep slopes.



- Lots size may vary, but the overall clustered development density should not be greater than 1-2 dwelling units per acre.

*Planning Rationale:*

1. The area contains steep slopes that constrain development.
2. The area contains floodplains that constrain development.
3. There is limited access to these isolated areas.
4. Many of these properties contain attractive environmental features that should be preserved and integrated with development.

### **Medium Density Residential**

This medium density residential category is recommended for the already developed and platted areas of Leach Run. This residential category would include the following land uses and development patterns:

- Single-family residences with lots of one-quarter acre or smaller
- Recommended density: 2-4 DU/A for single-family.

*Planning Rationale:*

The proposed lot sizes reflect the lot sizes in existing neighborhoods.

### **High Density Residential**

This proposed land use category is recommended for the existing high density apartment development. This residential category would include the following land uses and development patterns:

- Multi-family buildings and townhouses are typical land use types.
- Open space and amenities are integrated design features in the development.
- 2-5 acres is the minimum acreage for a development of this type.
- The recommended density is 6-10 dwelling unit/acre townhouses and 12-16 dwelling units/acre for multi-family.

*Planning Rationale:*

The designated area is near John Marshall Highway, a major transportation corridor where there are few site development constraints.



Figure 10 Leach Run Planning Area Future Land Use Map



### **Planned Residential**

Planned Residential development is recommended for a large portion of the Leach Run Planning Area which has the most potential for new development. This residential category would include the following land uses and development patterns:

- Residential development that is carefully planned and developed according to a master plan which encourages clustered development and considers important scenic views and environmental features (steep slopes, floodplains, limiting soils, etc.)
- Development that provides connected streets (internal and external), community open space, neighborhood recreational areas/facilities, and other appropriate community amenities.
- This type of development may include mixed types of residential uses such as single-family, two-family and townhouses; multi-family may be an appropriate mixed use, depending on the design and the attributes of the project; residential uses other than single-family and two-family dwellings should be limited to 20% of the development acreage. Non-residential uses, such as a church, library, or other neighborhood support uses also may be appropriate in selected areas depending on the project size.
- Densities are recommended to correlate with the Town's Planned Neighborhood Development District which provides for 4-6 DU/Ac.
- The recommended minimum acreage for a Planned Residential area is 20 acres to provide for a good mix. For planned developments over 50 acres, non-residential neighborhood uses are also encouraged to be part of the mix.

#### *Planning Rationale:*

1. The Leach Run Planning Area has many environmental constraints (floodplains, steep slopes, woodlands, etc.) that must be considered in land development.
2. Traditional single-family subdivision development options will not fulfill the community vision of effective growth management and environmental sensitivity.
3. Quality planned development will consider environmental resources and provide creative solutions for mixed housing, open space, and appropriate neighborhood amenities.
4. These areas will become more accessible with the construction of Leach Run Parkway.

### **Office/Commercial**

Light commercial and office redevelopment opportunities are recommended along John Marshall Highway. This commercial category would include the following land uses and development patterns:

- Small businesses (professional office, doctor/dentist, personal/business services, etc.)
- Churches and daycare



*Planning Rationale:*

1. John Marshall Highway west of the new Leach Run Parkway may be a potential area for development of small business.
2. Future market and land development conditions may be such that the existing mobile home park and smaller single-family homes would be opportunities for redevelopment.

**Neighborhood Commercial**

The Leach Run Planning Area should have a neighborhood commercial node in the central portion of the Leach Run Parkway to provide supporting services. This node is shown as a general location on the corridor; however, the location may shift depending on future development proposals which could include neighborhood commercial as a component of planned development. This neighborhood commercial category would include the following land uses and development patterns:

- Small neighborhood support businesses (convenience store, bank, cleaners, daycare, etc.).
- This category would include small, civic land uses (e.g., church, branch library, branch police/fire station, community center, indoor community recreation center, trail head, etc.)
- Commercial buildings should be restricted to 5,000 sf or less in size; parking should be limited. The commercial node should be well landscaped and designed to include pedestrian/bicycle connections. Lighting and signage should be minimal and oriented to neighborhood development.
- Access should be from an acceptable, planned intersection with Leach Run Parkway.
- Note: Existing Zoning Code does not provide for this category. There should be a Neighborhood Commercial District that is oriented specifically to supporting public and commercial uses for neighborhoods.

*Planning Rationale:*

1. There will be a need for neighborhood support services close to residential development in this area. Providing services in this area will reduce trips on other road corridors.
2. The neighborhood commercial node can provide locations for needed civic uses in this planning area (e.g., library, community center, fire/police station, etc.), as well as small business services for adjacent neighborhood residents.

**Civic/Institutional**

The Civic/Institutional category is recommended for the Leach Run Planning Areas in several locations where there are existing facilities. This land use category would include the following uses and development patterns:



- Land uses would include churches, civic organization buildings, colleges, and other civic-oriented land uses (e.g., club facilities, lodges, etc.), and special function facilities. This land use category maintains existing land uses that support new and existing residential development.
- Development would be in accordance with an adopted Master Plan that establishes the configuration of and the land uses associated with the particular facility or institution.

*Planning Rationale:*

Public-oriented land uses (e.g., colleges, churches) may be located on large lots and have a variety of functions that deserve special consideration and master planning to ensure compatibility with adjacent land uses.

**Public**

The Public category is recommended for the existing schools in the Leach Run Planning Area. This land use category would include the following uses: Government and public buildings (e.g., schools, libraries, fire stations, utility facilities, etc.)

*Planning Rationale:*

1. There are two major school facilities located in the Leach Run Planning Area that comprise a significant amount of land.
2. Other facilities could be located in this area in the future. These could include public facilities like a library, fire station, or community center. Note that these facilities may also be appropriately located in a neighborhood commercial area or a nonresidential land bay of a large planned residential district.

***Leach Run Planning Area: Undeveloped / Underdeveloped Land***

A map of the undeveloped and underdeveloped land in the Leach Run Planning Area that potentially could be developed in the future is shown in Figure 11. This figure includes vacant land parcels of 5 acres or more. A more detailed chart showing the recommended future land use, specific vacant land acreages, and their characteristic features is presented on the following page. Based on the calculated vacant land acreages for the Leach Run Planning Area, of the approximately 500 acres, there are approximately 398 acres that are not constrained by floodplain or steep slopes. The future land use map recommends that most of the undeveloped land be carefully planned residential or low-density, clustered development.



Leach Run: Undeveloped/Underdeveloped Land					
Potential Land Use	Undeveloped Acreage*	Percentage of Undeveloped Land	Area in Floodplain	Acreage in Steep Slopes (>25%)	Total Developable Acreage**
Residential estate					
Low-Density Residential, Cluster	97	19.4%	27	11	56
Medium-Density Residential	57	11.4%	13	2	42
High-Density Residential					
Planned Residential	332	66.4%	21	28	283
Civic/ Institutional					
Public					
Office/ Commercial	10	2.0%	0.5	0	9.5
Neighborhood Commercial	4	0.8%	0	0	4
Retail Commercial					
Recreational					
Planned Industrial/ Business					
<b>Total Land Use</b>	<b>500</b>	<b>100.0%</b>	<b>61.5</b>	<b>41</b>	<b>397.5</b>
* Undeveloped lands also include parcels that are large lots over five acres in size that could be developed more intensely.					
**Subtracts Floodplain Areas and Steep Slopes greater than 25%. Overlaps exist between areas Floodplain and Steep Slopes, but these overlaps are minor in the overall calculations.					



**Figure 11 Leach Run Planning Area Undeveloped / Underdeveloped Land**



## ***Leach Run Planning Area: Land Use and Development Policies and Action Strategies***

The following land use and development policies and action strategies shall apply to new development and redevelopment in the Leach Run Planning Area. These policies and strategies are in addition to the goals and development policies set forth in other sections of the Comprehensive Plan.

### **Natural Environment and Unique Features**

The Leach Run Planning Area contains many environmental and scenic resources that are important community assets for the town. These special features include woodlands, ridges, stream corridors, open land, and scenic vistas.

#### **Policies:**

1. Natural and unique features located within the Leach Run Planning Area should be protected to ensure the continued social and economic sustainability of the community.

#### **Action Strategies:**

- LR-EN 1** New development proposals shall consider environmental resources during planning and design and shall make special efforts to minimize the loss of woodlands and avoid development within the town's floodplains or on slopes greater than 15 percent.
- LR-EN 2** New development proposals shall consider soil constraints in the Leach Run Planning Area in project planning/design and include applicable studies and mitigation measures with an application for subdivision and/or development. Detailed soils information from the U.S.D.A. Natural Resources Conservation Service should be consulted and integrated into project plans.
- LR-EN 3** New development proposals shall consider preserving existing trees in project planning to the extent feasible. New trees shall be planted along all new streets and within new developments.
- LR-EN 4** New development proposals shall consider wildlife habitats in project planning and include measures to enhance stream corridors and other natural areas for wildlife.
- LR-EN 5** Natural and unique features such as key mountain vistas and important open spaces should be identified in the Leach Run Planning Area and a conservation plan developed to encourage protection through proffers, property acquisition and other applicable methods (i.e., conservation easements, proffers).
- LR-EN 6** The Town should review its Floodplain "Overlay" Zone and consider adding additional provisions to protect floodplains and stream corridors. Riparian buffer zones may be beneficial to both the natural environment and water quality.



- LR-EN 7** The Town should revise its subdivision ordinance to add provisions for improved guidelines for clustered subdivisions permitted by right. The zoning ordinance should be revised to add a new district that allows increased residential density in exchange for clustering development that preserves natural features.
- LR-EN 8** Section 148-43 of Front Royal's Subdivision Ordinance, *Preservation of Natural Features*, addresses the preservation of natural features in new subdivision development. The section should be revised to include more specific provisions regarding the public purpose of preserving these features, how these features should be identified, how preservation should be accomplished, and what submission requirements must be met for a subdivision application.
- LR-EN 9** The Subdivision/Zoning Ordinance should be revised to establish minimum open space requirements for the different residential zoning classifications.

## Housing and Neighborhoods

The Town of Front Royal is recognized for its quiet neighborhoods, historic character, and its scenic environmental qualities. The Leach Run Planning Area offers vacant land for community growth and expansion; however, because of topography and other constraints in the planning area, residential development must be carefully planned and designed to protect environmental features.

### Policies:

1. Development in the Leach Run Planning Area should enhance the town's quality of life and complement its attractive environmental features.
2. In addition to being complementary, new housing should provide a mixture of housing types that are affordable for a variety of citizens, including those with specialized housing needs (e.g., elderly, disabled).
3. New housing development should contain community recreation facilities and neighborhood service establishments to support residential service needs and minimize vehicle trips on transportation corridors.

### Action Strategies:

- LR-HN 1** New development proposals shall include land conservation planning and environmental design principles into proposed projects. Examples of appropriate approaches include clustered development, mixed-use development, greenways, wildlife preserves, landscaped gateways, common public open space or recreational areas, night-sky friendly lighting, etc.
- LR-HN 2** New residential proposals shall be responsive in meeting the housing needs of the community and offer a diversity of housing types and styles, as well as a mixture of land uses where appropriate, that will position the Town of Front Royal as a model



community for quality residential development.

- LR-HN 3** New housing development proposals shall consider the town's desired growth rate and include phased development for large projects in order to appropriately manage the service levels of public facilities and protect the public's health, welfare and safety.
- LR-HN 4** New residential proposals should include passive and active recreational amenities in projects to enhance the quality of life for residents. These amenities may include open spaces, greenways, trails, bikeways, small neighborhood recreation facilities, community center, pool, etc.
- LR-HN 5** New development proposals shall include provisions for planting trees to reforest the planning area.
- LR-HN 6** Section 148-16 of the Subdivision Ordinance, *Optional Open Space Subdivision*, should be revised to encourage quality clustered residential development that preserves open space and protects environmental features. Revisions should include additional statement of public purpose, definition of contributing environmental features, increased incentives for clustering development, revised design considerations, and revised development and open space standards that will add to the environmental and scenic qualities of the area.
- LR-HN 7** For large planned residential districts, development proposals should include a non residential component in the mix to complement the housing mix.
- LR-HN 8** New residential infill development proposals shall be consistent in lot size, density, and character with the surrounding neighborhood to maintain a harmonious community.

## Transportation and Infrastructure

The Town of Front Royal is committed to improving its transportation network, including adding multi-modal transportation alternatives such as greenways, bikeways and sidewalks, to enhance the community's overall quality of life. Responsible implementation of phased transportation improvements is fundamental to servicing public needs, accommodating new development, and promoting orderly growth and development of the community.

### Policies:

1. The cost of transportation and infrastructure improvements to accommodate new development shall be borne by private interests utilizing and benefiting from the facilities, or, where appropriate, equitably shared by public and private interests.
2. Development and growth shall be managed in accordance with adopted plans and phased infrastructure improvements so as to not overburden facilities or impair acceptable levels of service.



3. Transportation and infrastructure planning is both a Town and a regional matter that requires careful coordination and cooperation to ensure that new development and needed improvements are comprehensively studied, phased and implemented in the best manner to protect the public health, welfare and safety.

Action Strategies:

- LR-TI 1** New developments shall have main access from a major collector street, as opposed to utilizing existing, established neighborhood streets.
- LR-TI 2** New development proposals shall reflect adopted transportation plans and recommended phasing for improvements and new facilities.
- LR-TI 3** New development proposals shall include multi-modal transportation alternatives in the design of the project. Examples may include sidewalks, bike lanes/trails, greenways, and public transportation options. Multi-modal facilities should be considered or established neighborhoods, where feasible. New residential development proposals shall include pedestrian facilities such as sidewalks and trails. Facilities should be linked with other neighborhoods and existing/planned trails. Proposals shall integrate connections for planned bicycle paths along Happy Creek Road, John Marshall Highway and Leach Run Parkway as identified in the Town's adopted plan, *Where the Mountains Meet the River: Front Royal's Plan for Parks, Trails, Bike Paths and Greenways*.
- LR-TI 4** New development proposals shall be designed with inter-connected streets (internal and external to the development) to maximize access routes and provide expanded connectivity between neighborhoods.
- LR-TI 5** Roadway alignments for new development shall be sensitive to natural and unique environmental features.
- LR-TI 6** New development that creates or contributes to increased traffic volumes that affect the level of service for a corridor shall substantially participate in the cost and implementation of applicable transportation improvements or projects.
- LR-TI 7** New development shall identify the existing level of service for transportation corridors and supporting infrastructure and shall not reduce service capacity below acceptable levels. For transportation corridors and intersections, the level of service shall be maintained at a level of "C" or higher. New development proposals shall include appropriate transportation measures to maintain the desired level of service. The traffic impact analysis shall be provided using the SyncRO Traffic Generation Model (or other similar models if required by VDOT) which has been used to develop town transportation information.
- LR-TI 8** The proposed Leach Run Parkway between John Marshall Highway and Happy Creek Road should be designed and implemented by 2015. Development proposals in the area must address the construction of this planned roadway, particularly when



the development access is through the parkway.

**LR-TI 9**

A new east-west connector road should be provided between Happy Creek Road and John Marshall Highway in an appropriate location to relieve congestion on Happy Creek Road and provide improved access for schools and better connectivity to the proposed Leach Run Parkway.

**LR-TI 10**

Happy Creek Road should be improved as soon as possible to safely handle increasing traffic volumes; improvements should maintain the environmental character of the area and should include provisions for bicycles (either in the form of a dedicated bike lane, expanded shoulders, or bike route signage).

**LR-TI 11**

John Marshall Highway should be expanded to four lanes to the town limits to facilitate turning movements and provide added traffic handling capacity, particularly as redevelopment along the road is initiated and as development in the county along this corridor is increased. Where applicable, development proposals should address increased traffic on Route 55 and participate in its construction.

**LR-TI 12**

Where applicable and in conjunction with an adopted transportation plan and established system of impact fees, new development should participate in transportation impact fees to recover costs for public transportation improvements.

**LR-TI 13**

Traffic signals in the planning area should be timed appropriately and coordinated with others in town to enhance vehicular movements and improve the level of service.

**LR-TI 14**

Enhance pedestrian access and circulation by conducting an inventory of pedestrian facilities on roads in the Leach Run Planning Area (sidewalks, ADA compliance, etc.) and adding new sidewalks where appropriate and feasible.

**LR-TI 15**

The neighborhood commercial node should be coordinated with new Planned Residential development where there is a good connection to Leach Run Parkway. The parkway is designated as a controlled access highway; any access points and crossovers must be well coordinated and approved by the Town and VDOT. In addition, the neighborhood commercial node should be planned and developed in an environmentally sensitive manner that is compatible with area residential development.

**LR-TI 16**

John Marshall Highway/Westminster intersection must be improved to allow additional left-turn lane capacity.



## Open Space and Parks

Open spaces, greenways and parks are important community features that contribute to the quality of life for residents and businesses. The 1994 Front Royal Parks Plan designated greenway connections along the Leach Run stream corridors; trail connections were proposed between neighborhoods and the neighborhood schools. In recent years, land for a proposed Leach Run Park was developed for new school facilities in the Leach Run Planning Area. There are currently no public neighborhood parks in the Leach Run Planning Area.

### Policies:

1. Scenic vistas, open spaces and natural recreational spaces are important community features that contribute to the quality of life in Front Royal. They should be conserved and preserved for their social, economic and environmental benefits to both residents and visitors.
2. Neighborhoods should be served by both private and public amenities that create an adequate network of active and passive recreational facilities.

### Action Strategies:

- LR-OSP 1** New residential development in the Leach Run Planning Area shall include both active and passive recreational facilities in the design of new neighborhoods.
- LR-OSP 2** New development shall coordinate proposed plans with adopted recreational plans and include connections and linkages to planned facilities.
- LR-OSP 3** New development in the Leach Run Planning Area shall consider opportunities for including community facilities in proposed plans.
- LR-OSP 4** Work with Warren County to enable use of school recreational facilities by community residents when such facilities are in use for school functions.
- LR-OSP 5** Development proposals shall integrate connections for planned bicycle paths along Happy Creek Road, John Marshall Highway and Leach Run Parkway as identified in the Town's adopted plan, *Where the Mountains Meet the River: Front Royal's Plan for Parks, Trails, Bike Paths and Greenways*.



## Economic Development

Small commercial and neighborhood businesses may be appropriate in specified areas near Leach Run Parkway or John Marshall Highway, or within large planned developments.

### Policies:

1. Balanced growth that includes both residential and business uses is important to the health and welfare of citizens and the financial stability of Front Royal. Where appropriate, new development should consider opportunities for a mixture of complementary and supporting land uses.

### Action Strategies:

**LR-ED 1** The Town's zoning ordinance should be amended to include a Neighborhood Commercial category that relates specifically to small commercial businesses and other non-residential uses that support surrounding residential uses in neighborhoods.

## Public Services

Future development in the Leach Run Planning Area will require an extension of public services such as utilities for water, sewer, electricity, telephone, and other similar services. In addition, public services such as police, fire, schools and others may be affected by growth, resulting in additional public facilities and/or personnel.

### Policies:

1. New development in the Leach Run Planning Area shall "pay its own way" for public services required to meet the needs of such development.
2. Public services and facilities shall be provided in accordance with the Town's adopted Capital Improvement Plan.

### Action Strategies:

**LR-PS 1** New development shall address the needed improvements to public facilities in accordance with Front Royal's Fiscal Impact Model.

**LR-PS 2** New development proposals shall consider effects on public services and facilities and shall provide supporting documentation of impacts with development applications, as well as how the impacts will be mitigated.

**LR-PS 3** New residential subdivisions shall be served by public water and sewer. Fire protection services shall be considered for all new developments and measures included to ensure the public health, welfare and safety.



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- LR-PS 4** Utility lines for electricity, telephone, cable, etc. in new developments shall be located underground.
- LR-PS 5** The Town should revise its subdivision ordinance to include a provision requiring new development to pay a pro-rata cost share of reasonable and necessary off premise water and sewerage facilities where the subject development necessitates or requires improvements and there is an adopted improvement program/plan.
- LR-PS 6** New development proposals should contribute to the adopted Infiltration/Inflow Mitigation Plan until such time as the increased capacity is available in the wastewater treatment plant.