

# FRLP PROPOSED SPECIAL EXCEPTION #1 TO CHAPTER 148: V-DOT DESIGN STANDARDS?

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**OVERVIEW:** FRLP filed an application for a special exception to Ch. 148 of the Town of Front Royal Town Code on October 15, 2015, requesting that it have the option to use V-DOT street design and construction standards instead of existing Town standards in certain instances.



(Above - Goodview Drive: Note – not to scale)

# Introduction: “Street Design Guidelines for Healthy Neighborhoods”...

## Introduction:

A major shift in the way we design neighborhoods is taking place across America. People are working together to identify better ways to design new neighborhoods or retrofit existing ones to be more interactive, walkable, enjoyable and livable. After years of neglect, street design is re-emerging as a major element of neighborhood street engineering, town planning and real estate development.

Several real estate studies reveal that the top preference in purchasing a home combines low traffic volume, slow street speeds and minimal noise. Many people seek neighborhoods with parks, schools and other activities nearby for their children, while many “baby boomers”—anticipating the changing mobility of their older years—are asking for sidewalks, trails, greenways, and open space.

The desire for healthy, interactive neighborhoods is not a new phenomenon, but only quite recently have real estate marketers started to promote quiet, neighborly streets as a main incentive to buy houses in particular neighborhoods.

## Overview:

Traditional streets are an important component of healthy neighborhoods and livable communities. Pedestrians in most cities say they want well-designed neighborhood alleys, lanes and streets that keep motorist speeds between 10 and 25 mph, and provide on-street parking, sidewalks, shade, benches, street lamps, and other community amenities. These design elements combine to create an ideal environment that encourages walking, bicycling and a sense of community: streets should be well connected to offer a variety of walking routes and to distribute motorized traffic.

Traffic volume, speed and noise are reduced. By slowing motorized traffic, people discover that the front portions of their homes are pleasant places. They spend more time in front yards and porches, and meet neighbors along walkways and at street corners. Putting more people outside further slows traffic and enhances neighborhood security. As more people meet, make friends, and share information, neighborhood bonds are strengthened and people watch out for each other.

Over time, parents feel more comfortable about allowing their children to be outdoors more often, and they permit children to walk or bike to many of their favorite destinations. These attitudes foster activity and personal interaction that benefit the physical and emotional health of children, seniors, and, indeed, every resident who plays a part in creating a truly safe and healthy neighborhood.

## How Did Current Street Standards Become the Norm?

As researchers examined town codes nationwide, they found that new towns typically copied existing codes or adopted published standards without question. Rarely had anyone conducted research to find the right combination of elements needed to make streets successful. This lack of understanding has often resulted in noisy, high-speed, high-volume roads, which isolate neighborhoods and increase the need for auto trips.

In *Rural by Design*, Randall Arendt captures this copycat code syndrome of neighborhood street-making. He cites “Residential Streets”... current practices can be attributed to early standard setting based upon readily available state highway department manuals... While these standards

# Introduction: It's all relative

may be acceptable for major roads, they are out of character in a neighborhood and produce inappropriate driving behavior by motorists. Street-making is a simple art. However, because it is crucial to neighborhood and community design, many disciplines must collaborate to achieve the best street patterns for each neighborhood. ***Motorist behavior is primarily dictated by street design. Left solely to traffic engineering, neighborhood street design often reflects the interests of cars rather than the needs of people and healthy neighborhoods.***

## Winter Park and Celebration, Florida

We used Central Florida as our laboratory to test the feasibility of these guidelines. In the Orlando area, we explored streets of early 1900s town-making in historic Winter Park and compared them to the new town of Celebration built in the 1990s. By comparing the streets of the past with those of today, we were able to draw up several workable points of contrast.

Explaining our interest in creating new street standards, we asked the local fire fighters to direct us to Winter Park's narrowest streets. After first assuring us that they could handle any street in town, they chose 20 streets for our study. Arriving at the designated tree-canopied neighborhood, we found streets as narrow as 16 feet with parking on one side. Other streets with parking on two sides had total widths of 22–24 feet. These streets were extremely narrow, richly canopied with 60-to-70-foot-tall oak trees, but workable as access

to streets to homes. The residents and motorists we talked with were pleased with every function performed on those streets. Before leaving Winter Park, we should note that planners there today remind us that it is harder to defend these old, successful street designs to the current traffic engineers than it was to build them. The lost knowledge of traditional, healthy streetmaking takes its toll. It is essential that we rediscover this art...

In Celebration, we found many people out walking; children were plentiful along these quiet streets. A variety of streets enhance the community. One-way streets wrap around parks with onstreet parking on one side of the street. We found the 18-foot lane section acceptable, if not delightful. Other street types featured average widths of 28 feet with parking on both sides of the street. Even with well-utilized parking space on both sides, fire trucks traveling down this street have ample room.

Celebration's residents described their streets as wholesome, charming and "just right." Some visitors, they told us, find "the streets slow them down too much." This pace makes residents happy, however. ***We regarded the 28-foot streets as too wide, but an acceptable compromise for wide-street proponents*** (although these streets would not reduce traffic speeds if adjacent homeowners did not park their cars there)

# Introduction: Think. Different.

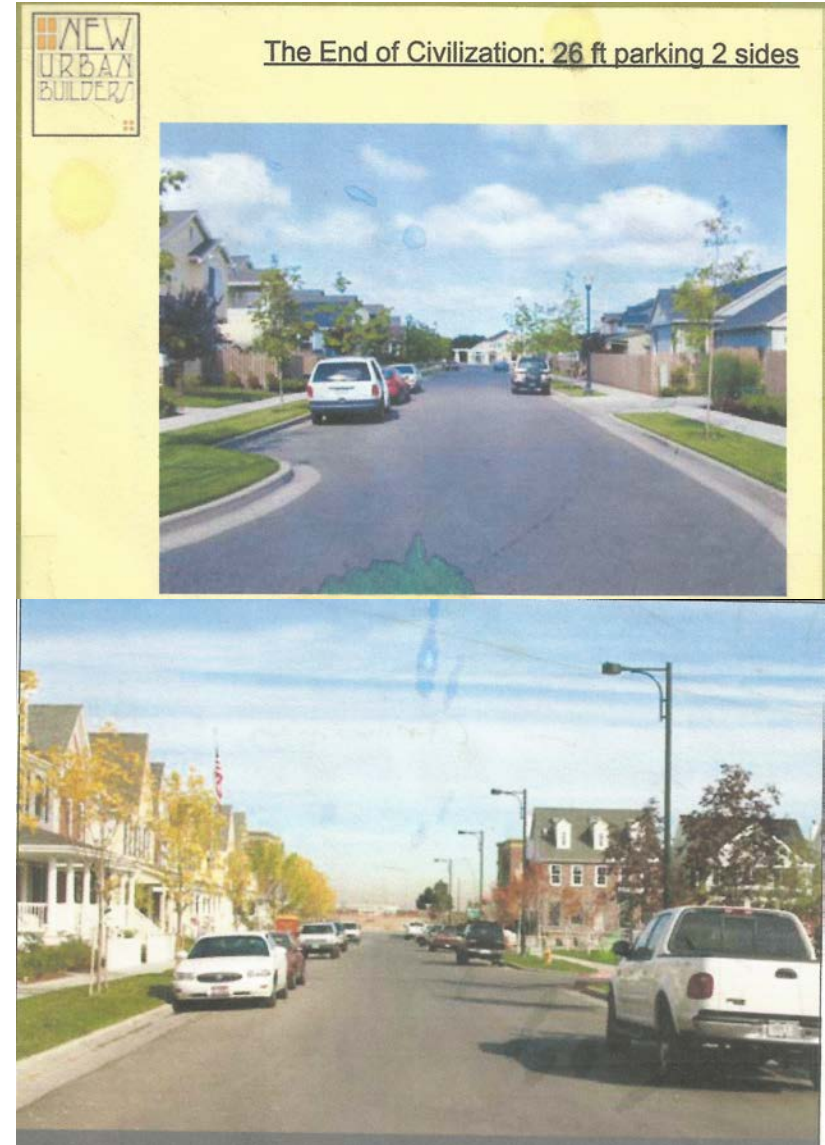
In some cases, specification values can be reduced; but in very few instances should they be increased. For instance, although we found that 26-foot-wide roadways are most desirable, we measured numerous 24-foot and even 22-foot wide roadways, which had parking on both sides of the street and allowed delivery, sanitation and fire trucks to pass through unobstructed. By contrast, Celebration, Florida's 28-foot street widths work, but do not reduce speed as well as narrower streets. In traditional, healthy neighborhood street design, the old adage of "more is better" simply does not hold.

Healthy, or traditional, streets are networks of roadways and connector trails in communities, designed primarily for use by people, not just motorized vehicles. Such streets are designed for motorists to feel comfortable operating at low speeds (15–20 mph).

Walkable streets form the backbone of friendly, interactive, safe, secure, neighborhoods. Along these streets, people know their neighbors, some of whom may live three blocks away. Walkable streets allow responsible motorists who live in or travel through the neighborhood to feel most comfortable at lower rather than higher speeds.

SOURCE: "Street Design Guidelines for Healthy Neighborhoods", Dan Burden, Director, Walkable Communities, Inc.

SOURCE (Right & "Healthy Streets Slides): Joint ITE and CNU Project, Developing Guidance for Context Sensitive Design (& used in FRLP's September, 2009 presentation to P.C.)





# V-DOT Design Standards?

FRLP's requested special exception includes changes to the Town's existing requirements for (Sec. 148-820 A-N):

- Minimum street width,
- Minimum street right-of-way,
- Cul-de-sacs,
- Driveways,
- Development entrances

## Principles of Healthy Streets

- Streets designed so drivers feel comfortable at slow speeds
  - 15-25 mph on neighborhood streets
  - 25-35 mph on avenues and boulevards



But... the Town maintains its own roads...

So why should the Town allow FRLP to use V-DOT standards in certain instances? Why should the Town listen to the engineers at V-DOT?

In 2006 (& 2009), after years of debate and study, and over 50 years of building & maintaining Virginia's road's, V-DOT narrowed their Neighborhood Street Design guidelines...

## But... Why Would V-DOT Narrow Street Widths?

**Principles of Healthy Streets**

- Narrower streets are slower and safer
  - Longmont, CO study of 20,000 accidents
    - Found street width had the greatest relationship to injury accidents
  - Accidents/mile/year were higher on wider streets

■ 40-foot wide street	2.23 a/m/y
■ 36-foot wide street	1.21 a/m/y
■ 24-foot wide street	0.32 a/m/y

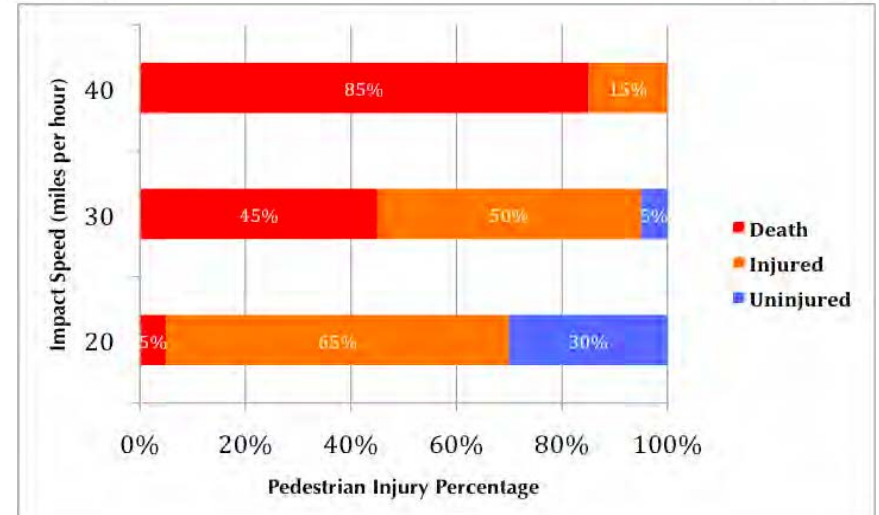
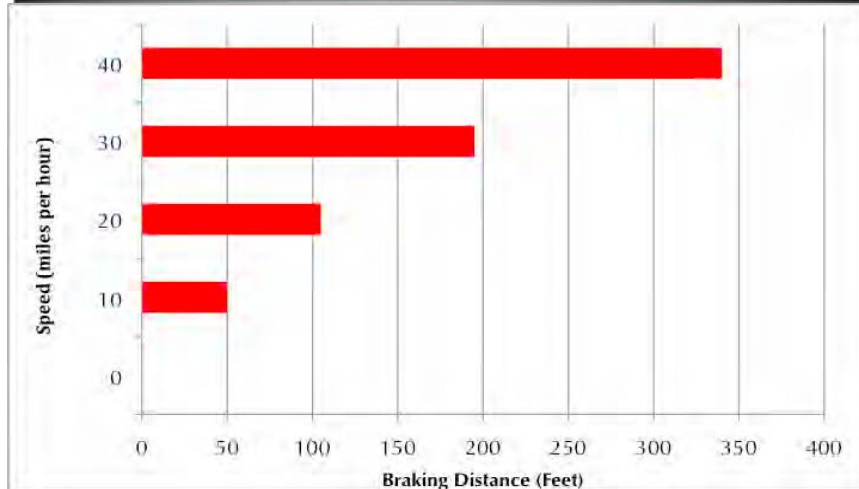
Source: "Residential Street Typology and Injury Accident Frequency,"  
Swift and Associates, Longmont, CO, 1997

1. **Narrower streets are safer streets.**
  - Streets designed to lower design speeds are narrower,
  - Narrower streets naturally reduce vehicle speed,
  - Slower vehicle speed improves the drivers line of sight and braking distance. Both improve overall safety – dramatically.
2. **Narrower streets are more pedestrian friendly (slower) and create a greater sense of “Community”.**
3. **Narrower streets are less expensive to maintain.**

**Quick Fact:** The Virginia Department of Transportation (V-DOT) maintains the third most miles of any state in the country (Source: Complete Streets: Best Policy and Implementation Practices”, American Planning Association, 2010).

# Peripheral Vision Depends Upon Speed...

(Safety depends upon speed and speed depends upon design)



Source: *Model Design Manual for Living Streets*, (Credit: Michele Weisbart)

Source (bottom): *Ibid*, and Federal Highway Administration Pedestrian Safety Design Course. The chart below (right) illustrates that crashes become more severe with speed.



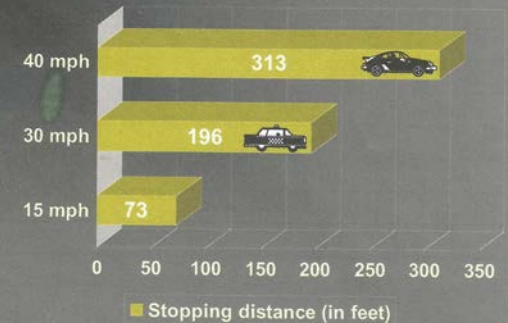
# Why the Town should consider using V-DOT standards...

1. Safety: Narrower streets are safer streets.
2. Town Comprehensive Planning: Narrower streets are consistent with the Town's Comprehensive Planning for growth and the environment for the past 20+ years.
3. Town Fiscal Considerations: Less pavement = less long-term maintenance costs to the Town for both streets and stormwater management facilities.
4. Environmental Benefits: Narrower streets, and minimizing impervious surfaces, are better for the environment.
5. Walkability and Livability: Narrower streets are more walkable and create a greater sense of 'community'. Better designed, and more livable neighborhoods command higher property values, and therefore taxes. Higher home values, better designed neighborhoods, and lower costs are a 'win/win' for FRLP and the Town. Think. Different.
6. Neighborhood Design Diversity: Narrower streets will provide a varying neighborhood and housing stock within the Town. Every neighborhood in the last 30 years has been built around large streets – FRLP is proposing that the Town consider offering a diversity of neighborhoods to future residents.

## Principles of Healthy Streets

■ Slow streets are safer streets

■ What happens when a driver slams on the brakes?



## Principles of Healthy Streets

■ Slow streets are safer streets

■ What happens when a vehicle hits a pedestrian





# V-DOT Standards are not progressive...

	#	MIN. DESIGN SPEED	NO PARKING	PARKING 1 SIDE	PARKING BOTH SIDES
<b>FRLP PROPOSED 2010</b>					
Local cul-de-sac Streets	1		18'	20'	26'
Local Streets	1		18'	20'	26'
Collector Streets	1		18'	N/A	26'
<b>V-DOT STANDARDS</b>					
ADT < 2000	2		24'	24'	29'
ADT > 2000	3		26'	31'	36'
<b>FRLP PROPOSED 2015</b>					
ADT < 2000			N/A	24'	29'
ADT > 2000			26'	31'	36'

## Principles of Healthy Streets

- Street as an outdoor room
  - People feel more comfortable when trees and houses provide a sense of enclosure
  - Eyes on the street make the street safer



## Street

Provides access to single-family homes.



### Street

- Street width 26-28 feet with curb, gutter and informal parking
- Planting strips 6 feet
- Sidewalks 5 feet on each side
- Average speed 20 mph
- Requires a 48-foot ROW
- Utility location — Underground or alley
- Drainage — Curb and gutter
- Two to six blocks long

### Buildings & Land Use

- Residential — many residential types
- Residences brought close to sidewalk
- Consistent building line recommended
- Front porches encouraged

## NOTES:

**#1** FRLP 2010 (Proffers) Proposed “Design Modifications” (Neighborhood Streets):

- One way local streets with a minimum pavement width of 16 feet;
- Two way collector streets without on-street parking and a minimum pavement width of 18 feet;
- Pavement widths of 20' with parking on one side for local and cul-de-sac streets; and,
- pavement widths of 26' with parking on both sides for local, collector, and cul-de-sac streets

**#2** If the Local Street has 1 point of access and ADT>400 vpd, then the roadway width must meet design values (2001 to 4000 vpd).

**#3** Lane widths may vary between 10'-12' feet for collectors with 2001-4000 ADT. Widths shown may be decreased by 2 feet (26 feet to 24 feet), (31 feet to 29 feet) and (36 feet to 34 feet) based upon engineering judgment subject to VDOT approval.

# The Town Comprehensive Plan & “Envision Front Royal” ...

- **“Allow greater flexibility in the subdivision and land development ordinance for streets and parking to reduce unnecessary amounts of impervious surfaces.”**
- “Among the rolling pastureland between Happy Creek Road and Interstate 66, hilltops tend to be covered with groves of vegetation... the scenic integrity could be maintained by preserving these groves and by designing structures and street plans that complement and emphasize the topography.”
- **“High walkability requires street designs that are ‘pedestrian-friendly’... Walkable places are designed for human scale and comfort first, and cars second.”**
- “Front Royal’s residents value safety and family-friendly programs. **Safety can be improved through better street design that slows traffic** and makes walking and biking more attractive...”
- “Front Royal desires new growth that is consistent with the characteristics of traditional neighborhoods, which include well connected streets, sidewalks, and the potential for mixed use.”
- **“Set design standards that encourage walkable development. The Town and County can accomplish this action in the near term through zoning and development codes.”**

We are not asking the town to be progressive...

## A TRAGIC IRONY

STRO  
TOW



Our wide streets allow us to quickly respond to collisions caused by our wide streets.

We are asking the Town to consider V-DOT standards to be reasonable (i.e. to meet the public health, safety, and general welfare)