FRLP TOWN COUNCIL HANDOUT, MARCH 16, 2015

Driving Principles: Reduce the impact of development on our natural environment by:

1. Reducing the overall “footprint” of new development,
2. Reducing the amount of impervious surfaces required, and
3. Improving the decades long approach of “gray infrastructure” instead of “green infrastructure” to better manage and protect our water resources.

CHAPTER 148: STREET DESIGN STANDARDS

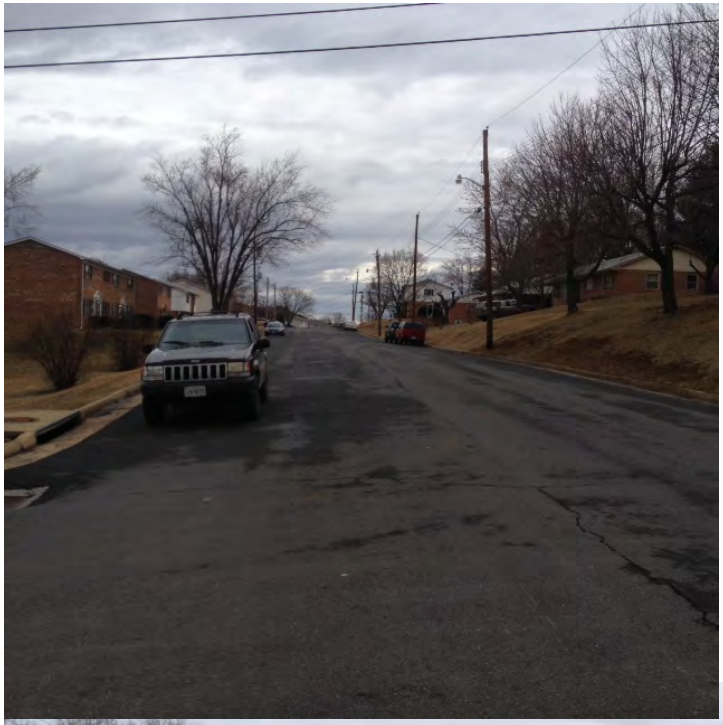
A Case Study:

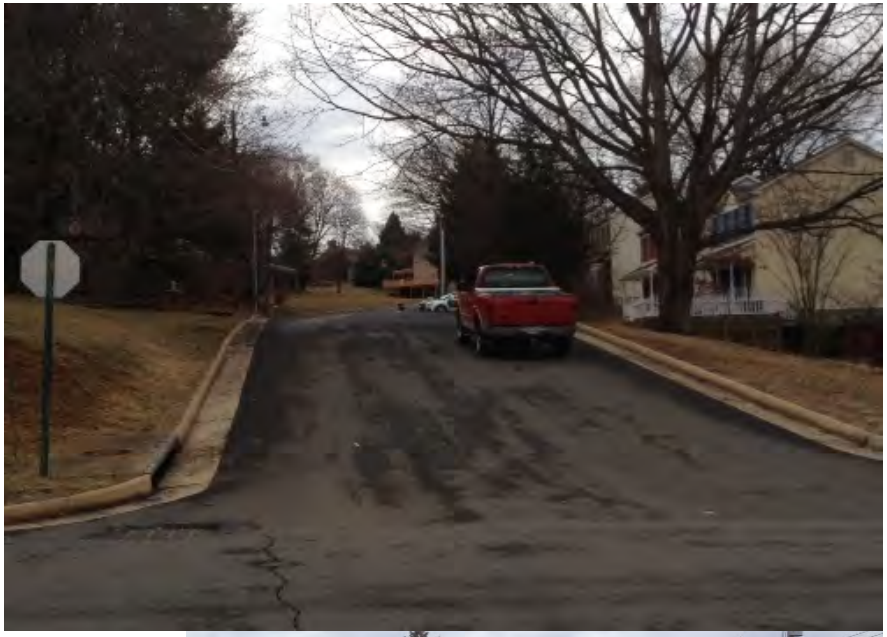
- Enough Parking?
- Emergency Vehicle Access?
- Did VDOT Engineers ignore safety issues – or could safety issues actually be one of the driving forces of VDOT standards?

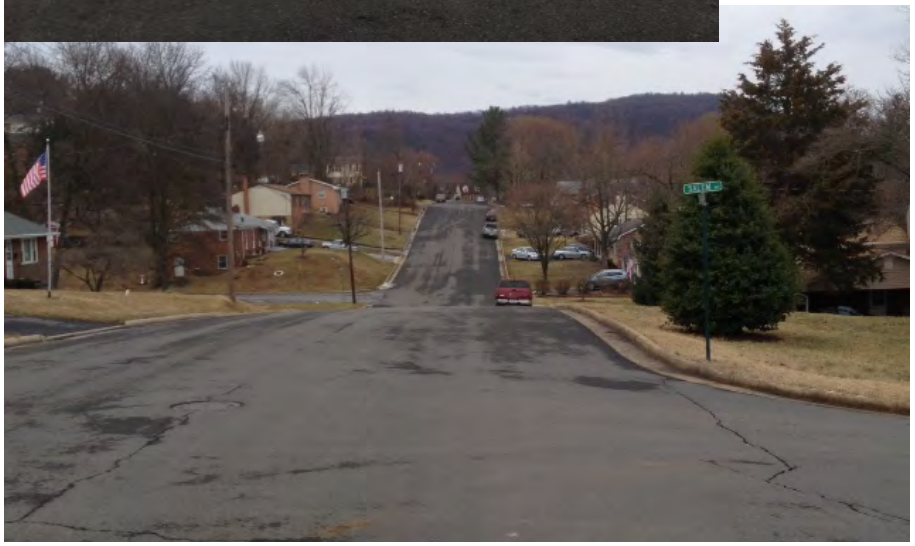
Goodview Drive (40')

Wakeland Court (40') and Stuart Drive (40')

Shenandoah Avenue (40'- left) and Salem Avenue (32'- right)







Virginia Avenue (36'- left) and W. 4th Street (right)

Kerfoot Avenue (36')

W. Stonewall Drive (left) and Lee Street (31'- right)

Lee Street looks to use about 50-60% of its available parking spaces – and these lots look to be around 5,000 square feet or so with limited off street parking. Every other street looked to have between 5-20 (sometimes more) open parking spaces for each parked

W. Main Street (34’6”) – Local Connector (Avtex)

Local (and neighborhood) roads should be designed to force drivers to…

Slow. Down.

1st Street (20' 6") (parking both sides) (at Virginia Avenue)

- Town Comprehensive Plan and Proposed Town SLDO Street standards vs. VDOT standards
- Background information (more info www.frontroyalplan.com / water resources / FRLP Earth Friendly design presentations to P.C.)
- VDOT Curb & Gutter neighborhood street design standards (attached)
- Additional Engineering Resources (AASHTO etc.- attached) ("Google" Healthy/ livable Neighborhood Streets… or anything close to it)

TOWN COMPREHENSIVE PLAN (1997)…

"Allow greater flexibility in the subdivision and land development ordinance for streets and parking to reduce unnecessary amounts of impervious surfaces."

"Adopt stormwater management techniques, such as grassy swales, that are both effective on-site control measures and aesthetically pleasing."

"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."

STREETS:
TOWN STANDARDS VS. V-DOT - 150 ACRES, 394 LOTS

SLDO - Proposed Per Public Hearing

ADT's	Length	Width	Road Surface	Acres (43,560)
4,000+ ADT's	5245	40	209800	4.82
2,000+ ADT	8388	40	335520	7.70
Up to 2,000 ADT	9247	**36**	332892	7.64
	22880		**878212**	**20.16**

Proposed Per "Plate 3" of Staff Handout (Per P.C.)

ADT's	Length	Width	Road Surface	Acres (43,560)
4,000+ ADT's	5245	40	209800	4.82
2,000-4,000 ADT's	8388	36	301968	6.93
Up to 2,000 ADT	9247	**32**	295904	6.79
	22880		**807672**	**18.54**

Town "Plate 3" calculated 19.24 acres vs. 18.54 here(?)

VDOT (Curb and Gutter Design Standards)

ADT's	Length	Width	Road Surface	Acres (43,560)
2,000+ ADT's	5245	36	188820	4.33
2,000+ ADT's	8388	36	301968	6.93
Up to 2,000 ADT	9247	29	268163	6.16
	22880		**758951**	**17.42**
Parking 1 side		Width Reduction		
On 1/2 of streets	11440	5	57200	1.31
			701751	**16.11**

V-DOT Standards would reduce impervious cover by 2.74 acres, **or 2 football fields of pavement.** VDOT Standards with parking on one side of half the streets = 4.05 acres = **3 football fields of pavement.**

Background: FRLP presented & requested these design principles (and more) as a part of its rezoning (2009)…

Chapter 148 (SLDO)

1. Using VDOT Street Design Standards

2. Using VDOT R.O.W. Standards
   - If R.O.W. requirements are 5' more than needed on 22,880 feet of roads – you are increasing the footprint of development by 2.6 acres – in FRLP's development that is 2.6 acres less open space

3. Keeping an open mind to alternative SWM
   - Green Infrastructure vs. Gray Infrastructure- TBC (I hope)

Chapter 175 (Zoning)
No variances allowed…

1. Lot sizes, widths, and setbacks

2. Parking Requirements
   - Parallel =7' in width (VDOT)
   - Consider

3. Maximum building coverage

The reason repeatedly given for increasing sidewalk widths is because that is what VDOT now requires – It is the same reason that FRLP is requesting the Town allow (by-right) VDOT curb and gutter street standards

Street Widths
Picture Examples

CHESTER STREET

32’ Wide

HAPPY RIDGE & GOODVIEW DRIVES

40’ Wide

SHENANDOAH AVENUE

40’ Wide

SALEM AVENUE

32’ Wide

VIRGINIA AVENUE

36’ Wide

4 ½ Foot landscape strip between sidewalk and curb.

KERFOOT AVENUE

36’ Wide

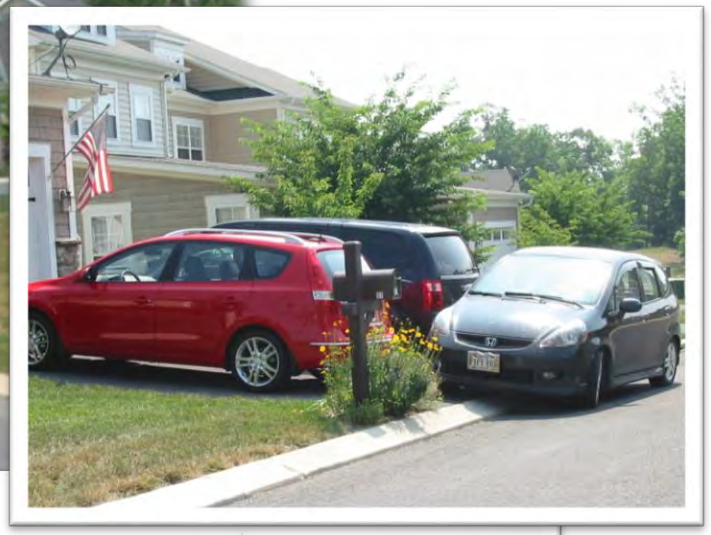
No curb on park side

Lee Street

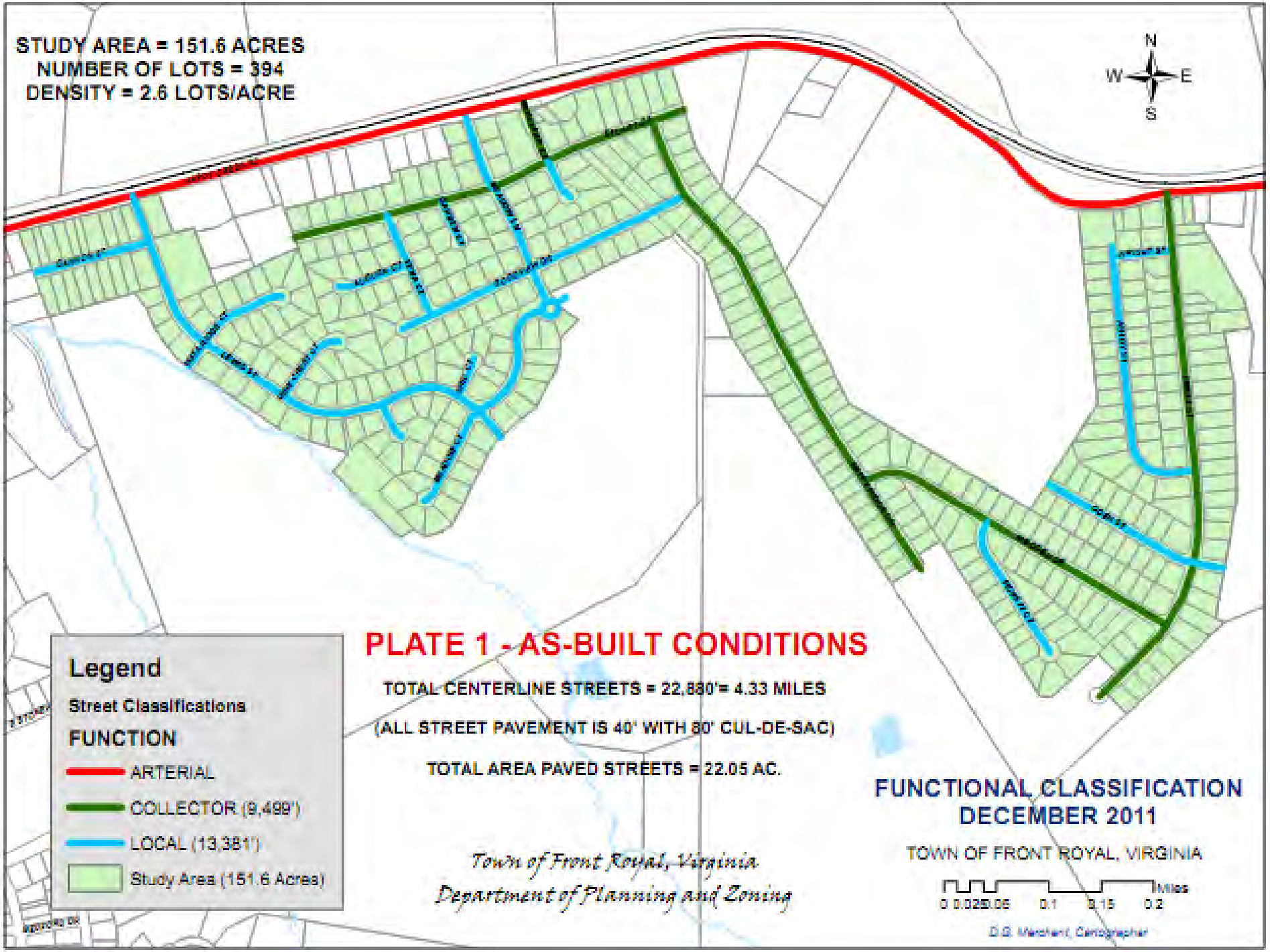
31’ Wide

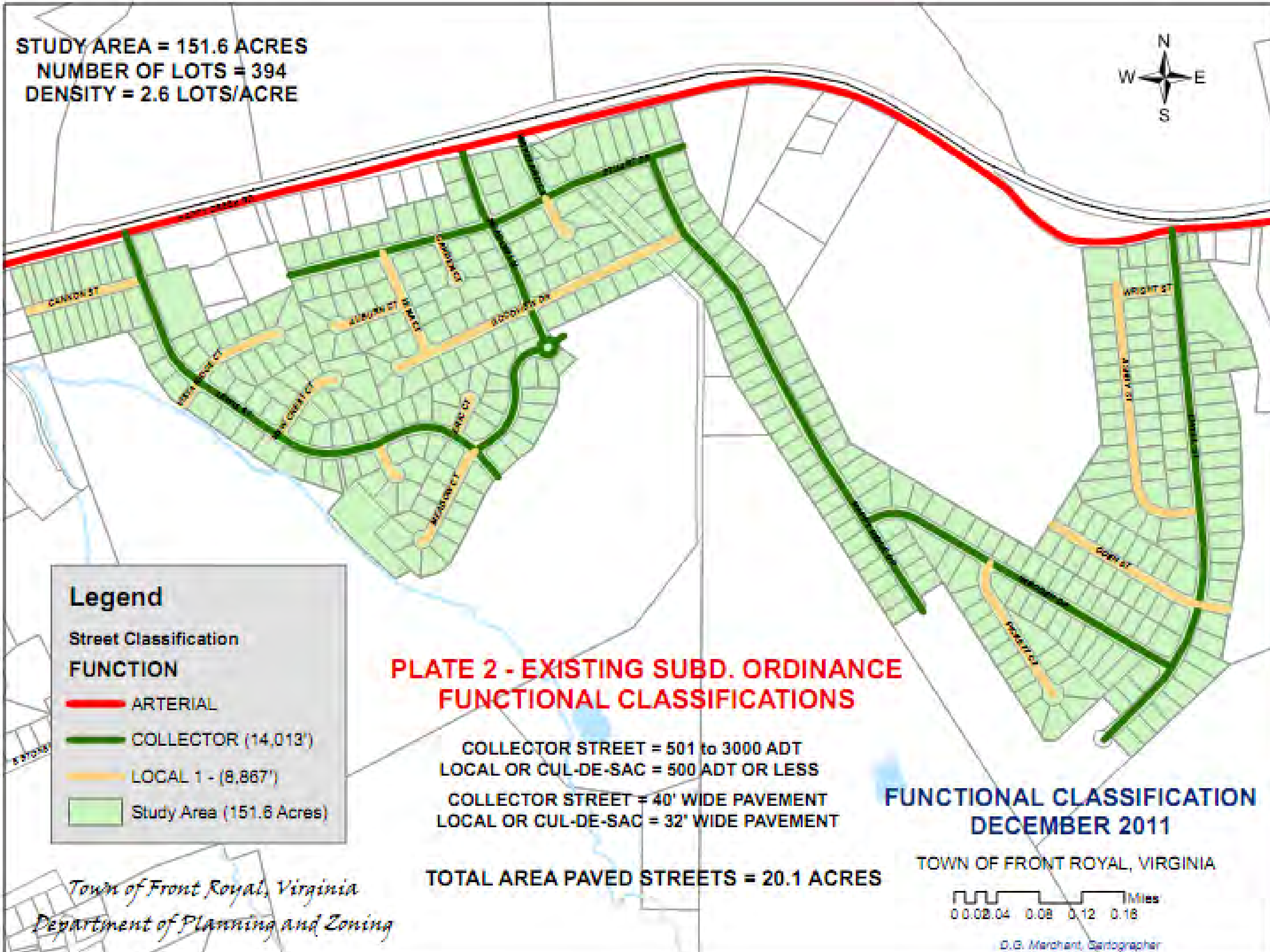
Shenandoah at Lake Frederick

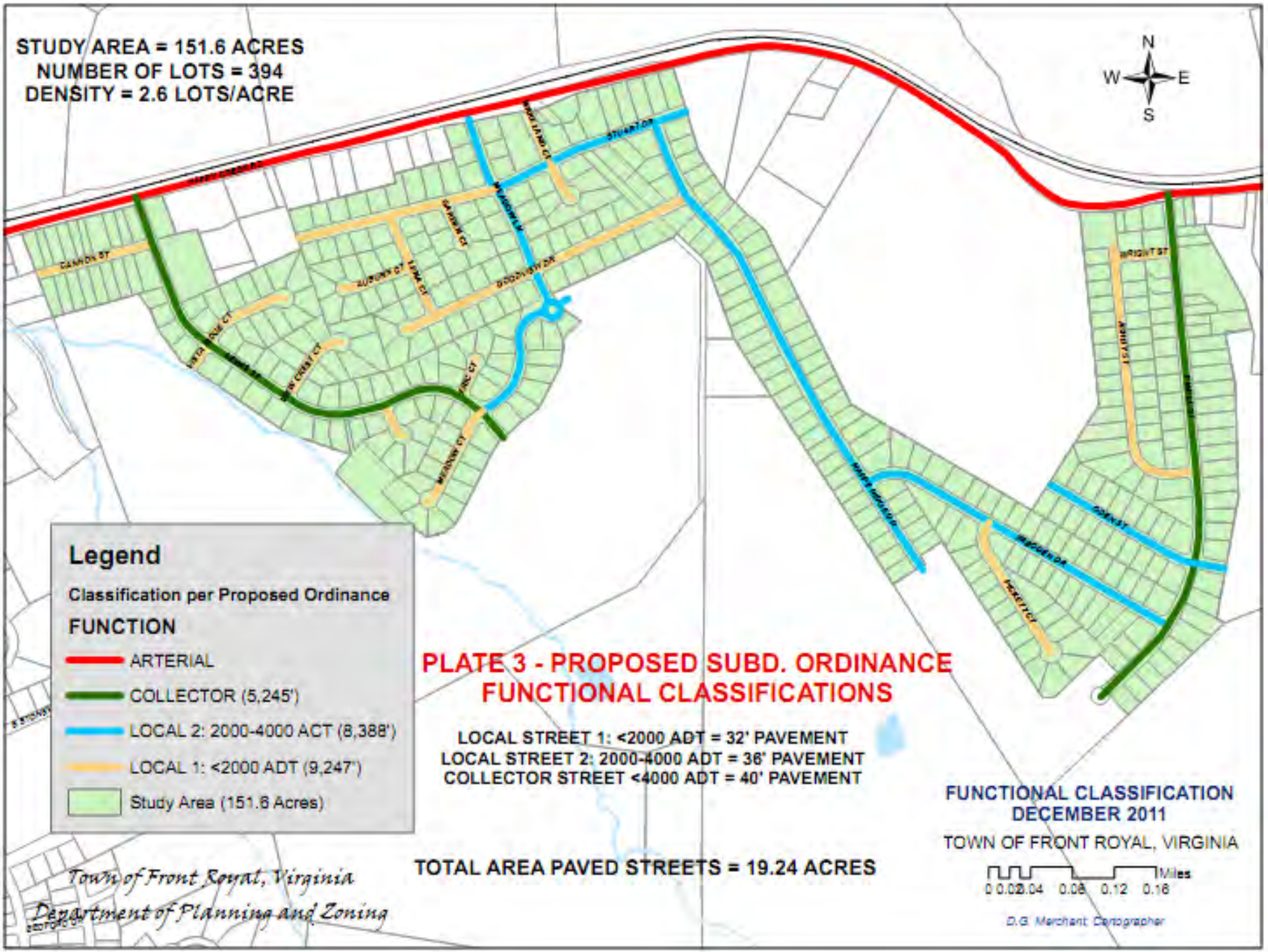
22’ Wide, no sidewalks - no parking



A Case Study


STUDY AREA = 151.6 ACRES
NUMBER OF LOTS = 394
DENSITY = 2.6 LOTS/ACRE
N
W
E
S
Legend
Street Classifications
FUNCTION
ARTERIAL
COLLECTOR (9,499')
LOCAL (13,381')
Study Area (151.6 Acres)
PLATE 1 - AS-BUILT CONDITIONS
TOTAL CENTERLINE STREETS = 22,880'= 4.33 MILES
(ALL STREET PAVEMENT IS 40' WITH 80' CUL-DE-SAC)
TOTAL AREA PAVED STREETS = 22.05 AC.
Town of Front Royal, Virginia
Department of Planning and Zoning
FUNCTIONAL CLASSIFICATION
DECEMBER 2011
TOWN OF FRONT ROYAL, VIRGINIA
Miles
0 0.025 0.05 0.1 0.15 0.2
D.S. Merchant, Cartographer


STUDY AREA = 151.6 ACRES
NUMBER OF LOTS = 394
DENSITY = 2.6 LOTS/ACRE
N
W
E
S
CANNON ST
WRIGHT ST
Legend
Street Classification
FUNCTION
ARTERIAL
COLLECTOR (14,013')
LOCAL 1 - (8,867')
Study Area (151.6 Acres)
PLATE 2 - EXISTING SUBD. ORDINANCE FUNCTIONAL CLASSIFICATIONS
COLLECTOR STREET = 501 to 3000 ADT
LOCAL OR CUL-DE-SAC = 500 ADT OR LESS
COLLECTOR STREET = 40' WIDE PAVEMENT
LOCAL OR CUL-DE-SAC = 32' WIDE PAVEMENT
TOTAL AREA PAVED STREETS = 20.1 ACRES
FUNCTIONAL CLASSIFICATION
DECEMBER 2011
TOWN OF FRONT ROYAL, VIRGINIA
Miles
0.16
Town of Front Royal, Virginia
Department of Planning and Zoning
D.G. Merchant, Cartographer


STUDY AREA = 151.6 ACRES
NUMBER OF LOTS = 394
DENSITY = 2.6 LOTS/ACRE
N
W
E
S
Legend
Classification per Proposed Ordinance
FUNCTION
ARTERIAL
COLLECTOR (5,245')
LOCAL 2: 2000-4000 ACT (8,388')
LOCAL 1: <2000 ADT (9,247')
Study Area (151.6 Acres)
PLATE 3 - PROPOSED SUBD. ORDINANCE
FUNCTIONAL CLASSIFICATIONS
LOCAL STREET 1: <2000 ADT = 32' PAVEMENT
LOCAL STREET 2: 2000-4000 ADT = 36' PAVEMENT
COLLECTOR STREET <4000 ADT = 40' PAVEMENT
TOTAL AREA PAVED STREETS = 19.24 ACRES
FUNCTIONAL CLASSIFICATION
DECEMBER 2011
TOWN OF FRONT ROYAL, VIRGINIA
Miles
0 0.02 0.04 0.08 0.12 0.16
D.G. Merchant, Cartographer
Town of Front Royal, Virginia
Department of Planning and Zoning

LID, Earth Friendly Design Standards and Model Development Principles (CWP)

Town of Front Royal, Va. P.C. Presentation, July 2011

What is LID? "Low Impact Development (LID) specifically aims to preserve open space and minimize land disturbance while protecting natural systems and processes. LID techniques attempt to incorporate natural elements into site design and manage storm water at its source with the ultimate goal of preserving pre-development hydrology and water quality" (Environmental Protection, 'A More Natural Approach' www.eponline.com).

National Policy: The shift toward LID

- **Navy Directive**
  - "Conventional storm water collection and conveyance systems and SW treatment options do not and can not replicate natural systems, thus increasing the volume and flow of SW…"
  - LID 'must be' implemented.
    - Assistant secretary of the Navy Penn memorandum (November 16, 2007).

- **Energy Independence and Security Act 2007**
  - "Sec. 438. Storm Water Runoff Requirements for Federal Develoment Projects. The sponsor of any development or redevelopment project involving a federal facility… shall use site planning, design, construction, and maintenance strategies for the property to maintain or restore, to the maximum extent technically feasible, the predevelopment hydrology of the property…"

- **Many Communities are creating monetary incentives**
  - Incentives can speed adoption
  - Some states and cities are providing tax credits or fee reductions for implementation of practices (e.g. rain gardens) or for the reduction in effective impervious area. Portland, Philadelphia, Minneapolis…
    - EPA, 'Evolving National Stormwater Policy - The Shift to LID'
      - CSO's - Green Infrastructure

National Policy: The shift toward LID

- Chesapeake Bay Act 2000
  - – Va. Agreed to assist municipalities in revising local ordinances to facilitate LID by 2005. Oops.

- Maryland Stormwater Act of 2007
  - – Environmental Site Design (a comprehensive approach that *includes* LID) is the preferred stormwater control method in the State and must be used as the first control option for new development projects.

- Va. SWM Act of 2009. These regulations are done and will be implemented starting in October of this year.

- House Bill 1953, passed by the 2003 session of the Virginia General Assembly, the Department of Environmental Quality has appointed, and facilitated discussions for, the Low Impact Development Assessment Task Force. This report is available from the Department of Environmental Quality (DEQ) website at: http://www.deq.state.va.us/regulations/reports.html.

National Policy: The shift toward LID ***and*** Earth Friendly design standards

- "First and foremost LID attempts to reduce the overall 'footprint' of a developed site" (ibid, www.eponline.com)

- LID site design and LID SWM techniques are ***a part of*** a larger, national movement toward more Earth Friendly and environmentally sensitive development principles that:
  - Reduce the amount of 'disturbed' area of the site. Minimize clearing and grading.
  - Reduce the amount of impervious surfaces.

- Earth Friendly design principles such as minimizing impervious surfaces, or a developments 'footprint', are environmentally beneficial whether you are using LID SWM techniques or not.

National Policy: The shift toward LID ***and*** Earth Friendly design standards

- The Center for Watershed Protection ('Better Models for Development');
- The EPA's 'Green' Infrastructure Program (CSO's); and,
- LID development standards...

…all promote the same design and environmentally sensitive development principles…

Earth Friendly design standards are not just better for the environment:

- They create better communities;
- They nurture ‘civic culture’ and promote civic mindedness; and,
- They reduce long-term maintenance and operation costs for the Town and property owners.

Earth Friendly design standards are good planning, good environmental stewardship, fiscally prudent, and consistent with the environmental principles of the Comprehensive Plan (Minimize impervious surfaces etc. etc. pg. 26)

Opportunities for more Earth Friendly site design in Front Royal

- Earth Friendly site design? How? **Chapter 175:**
  - Reduce lot sizes and set-backs. Open Space Ordinance.
  - Minimize Utility R.O.W.'s (encourage in streets)
  - Minimize Parking Requirements

- Earth Friendly site design? How? **Chapter 148:**
  - Reduce street widths and R.O.W.'s.
  - Permit sidewalks on one side if ADT< 3500 and permit no sidewalks if ADT< 500.
  - Allow by-right (or enable to P.C. to approve..):
    - Shared driveways; and
    - The use of alternative materials for streets, driveways, and sidewalks.

Impediments to more Earth Friendly site design in Front Royal

- Current codes do not allow sensible or environmentally friendly design principles.
- Market Uncertainty.
- Propensity to over regulate.
- Code/ Regulatory Uncertainty.

✓ Also see: *'Impediments to LID and Environmentally Sensitive Design'*, December, 2002. STAC Publication 02-003. (Sponsored jointly by: Chesapeake Bay Program's Land, Growth and Stewardship Subcommittee, Chesapeake Bay Program's Scientific and Technical Advisory Committee, and Virginia Tech's Institute for Innovative Governance).

Opportunities for more LID SWM techniques in Front Royal

- Manage (control & filter/clean) SW as close to its source as possible; by EITHER:
  - Write a new SWM ordinance (stafford, Warsaw va etc etc.) OR
  - Keep existin language or make minor changes and add a paragraph that allows the P.C. to approve alternative SWM designs and standards and to approve subdivisions without curb and gutter.

Impediments to[44] more LID SWM techniques in Front Royal

- Market Uncertainty.
- Propensity to over regulate.
- Code/ Regulatory uncertainty.
- **Specific Issues and Potential Impediments to LID SWM techniques in Front Royal:**
  - **Soils**
  - **Karst Terrain and 'Hotspots'**
  - **Maintenance? Town/ property owner/ HOA?**

✓ Also see: **Technical Bulletin No. 1** Stormwater Guidance for Karst Terrain in the Chesapeake Bay Watershed - ver 2.0 JUNE 2009. Chesapeake Stormwater Network.

This is not a case of ‘all or nothing’: Roads Widths.

Case Study: FRLP Property - *Roads*.

- ***Internal Roads.*** Approximately 3.5 miles (or 18,480 feet) of internal roads will be in the FRLP subdivision. Per the proposed ordinance (41 feet) that will equal 757,680 square feet of impervious pavement. Using V-DOT standards (28 feet - which I would consider conservative and not progressive) FRLP would have 517,440 square feet of impervious pavement. Using these proposed standards instead of V-DOT street width standards will mean an additional 240,240 square feet of impervious pavement, or 5.515 acres.

- ***Future East-West Connector.*** As you all know FRLP has proffered to build approximately 2.5 miles of a future east-west connector road. Section 148- clearly wants FRLP to build a 4 lane road when one is not needed. Even if it was, FRLP believes that should be the P.C.’s choice and no one else’s. Building a 24’ roadway versus a 48’ roadway would mean 7.27 acres of land would be open space instead of impervious pavement.

FRLP Position: Road Widths.

- In this economy the Town should be trying to reduce costs for builders not increase them. The trade off is safer roads. FRLP proffered significant amounts of money based on assurances from the Town that a new subdivision ordinance, with smaller streets, would be forthcoming by ‘the end of 2010 at the latest’. Other developers will be able to proffer more funds if they spend less on roads.

This is not a case[46] of ‘all or nothing’: R.O.W.’s

Case Study: FRLP Property - *R.O.W’s*.

- Increasing the R.O.W’s by 5’ (60’ to 65’) will mean an applicant needs to build more roads to get the same number of lots (you need to be reducing these widths, like V-DOT et. al.). In the FRLP subdivision this would result in approximately 2.29 more acres of R.O.W. and 2.29 acres less open space.

- Conversely, decreasing R.O.W.’s to 45’ from the proposed 65’ would **add** 9.16 acres of open space!

FRLP Position: R.O.W.’s.

- This is over regulation to the environments detriment. It would take 5 minutes to fix this.

This is not a case of ‘all or nothing’: Sidewalks.

Case Study: FRLP Property - *Sidewalks.*

- Going from 4’ to 6’ sidewalks will **increase** the impervious sidewalk cover in the FRLP subdivision by approximately 1.7 acres.
- Increasing sidewalks from 4’ to 6’ but requiring sidewalks on only one side of the road will **decrease** the impervious sidewalk cover in the FRLP subdivision by approximately 1.7 acres.

FRLP Position: Sidewalks.

- Flexibility is needed. Some people like having a sidewalk in front of their home and others do not. I think 5’ or 6’ sidewalks help foster community but that would add costs at the wrong time. Cul-de-sac streets also do not need sidewalksif the community has some walking trails.

Case Study: Town of Front Royal and the Center for Watershed Protection's (CWP) 'Model Development Principles'

- **<u>Front Royal scored 16 out of 100.</u>** *'Community Codes and Ordinances Worksheet'*, The CWP.
  - Scores less than 60 = 'Development rules definitely are not environmentally friendly. Serious reform of the development rules is needed'.
  - Scores between 60-69 = 'Development rules are inadequate to protect your local aquatic resources'.
  - Scores between 70-79 = 'Significant opportunities exist to improve your development rules'.

- On principles 1-10 (parking, roadways, and driveways) Front Royal scored a 4 out of 40.
- On principals 11-16 (lots, density, overall design and appearance of neighborhoods Front Royal scored a 7 out of 36.
- Principles 17-22 addressed the codes or ordinances that promote (or impede) protection of existing natural areas and open space Front Royal scored 5 out of 24 points.

✓ Additional resource: The Virginia DCR also has a 'Checklist for Advisory Review of Local Ordinances' on its website (www.dcr.virginia.gov).

Case Study: Town of Front Royal

- The majority of recommended **Earth Friendly design standards** changes in both Ch. 148 and Ch. 175 would not be that difficult or time consuming to implement now (streets, R.O.W.'s, sidewalks, alternative/ pervious materials for sidewalks and driveways, shared driveways…).

- Overhauling the **Chapter 148 SWM section** after this is finished makes sense.
  - All future developments will be subjected to new state requirements.
  - Simple language could also be added now that allows by-right any LID SWM techniques permitted by the state; **OR,**
  - A mechanism in ch. 148 could be added now that enables the P.C. to grant a waiver to Town SWM requirements if the applicant has met the requirements of the state.

- Doing an **overhaul of Chapter 175** (new open space ordinance, revisit parking standards, review/revise lot sizes and set-backs) should be a very high priority after this is finished.

Case Study: Town of Front Royal.

- **Background:**
  - July 2010 Presentation to P.C. (re: LID Site Design, roads, R.O.W. etc.)
  - September 2009, Presentation to P.C. (re: EPA 'Green Infrastructure')
  - September/October 2007 comments to P.C. (re: open space).

- **Changing anything is difficult.**
  - Just as changing an ordinance will be controversial and have substantive consequences on future neighborhoods - inaction, or a refusal to act, will have substantive consequences on future neighborhoods.

- **FRLP Position.**
  - FRLP would like to submit a preliminary plan based upon reasonably anticipated design changes in the Fall of this year so that when/if Council approves the new Ch. 148 our plan would be ready for preliminary P.C. approval.
  - We would like to have an idea of road widths, ROW's, sidewalks, etc will look like.
  - Site design is expensive. Even more so in an uncertain regulatory environment.

▪ **Concluding Thoughts.** The Community needs to find its own balance and comfort level incorporating Earth Friendly design standards without adding (or at least minimizing) new costs or unnecessary bureaucracy to the private sector AND without over regulating business decisions. THANK YOU FOR LISTENING!

Additional[51] resources

- Model Development Principles for the Central Rappahannock: A Consensus of the Central Rappahannock Roundtable (www.riverfriends.org), a working group of development, conservation, site design, public safety and regulatory professionals from Stafford, Spotsylvania and Fredericksburg, Virginia.

- Introduction to the Neighborhood Model, and **Building in the Neighborhood Model** from Albermarle County, Virginia.

- The **Valley Conservation Council's** guiding principles include **Maintain a Clear Edge (Reduce Sprawl)** and **Build Livable Communities**. Additional presentations from the Valley Conservation Council include:▪Local Roads and Smart Growth Workshop Proceedings; and,▪▪Better Models for Development in the Shenandoah Valley.

"A wise and frugal government, which shall leave men free to regulate their own pursuits of industry and improvement… - this is the sum of good government." - **Thomas Jefferson** (Albermarle County, 3rd President of the U.S, Second President of the U.S., out of 8 total, from Virginia.