

MONTGOMERY COUNTY PLANNING COMMISSION
March 21, 2012 @ 7:00 P.M.
Board Room, Government Center

A G E N D A

CALL TO ORDER:

DETERMINATION OF A QUORUM:

APPROVAL OF AGENDA:

APPROVAL OF CONSENT AGENDA:

PUBLIC ADDRESS:

OLD BUSINESS:

- Safe Route To Schools Project
 - Auburn Elementary & Middle School (Brea Hopkins)
 - Belview Elementary(Jamie MacLean)

NEW BUSINESS:

- Liaison Appointments

WORKSESSION:

- Zoning Ordinance Amendments (Dari Jenkins)
 - Impervious surface requirements regarding commercial parking
 - Kennel definitions
 - Penned animals

LIAISON REPORTS:

- Board of Supervisors- Chris Tuck
- Agriculture & Forestal District- Bob Miller
- Blacksburg Planning Commission – Frank Lau
- Christiansburg Planning Commission – Bryan Rice
- Economic Development Committee- John Tuttle
- Public Service Authority – Vacant
- Parks & Recreation- Ryan Thum
- Radford Planning Commission- Bob Miller
- School Board- Bill Seitz
- Transportation Safety Committee- Vacant
- Planning Director’s Report- Steven Sandy

MEETING ADJOURNED:

UPCOMING MEETINGS:

April	11, 2012	Planning Commission Public Hearing (7:00 pm)
April	12, 2012	Smart Road Tour (4:00 pm- 6:00 pm)
April	18, 2012	Planning Commission Site Visits (To be determined) Planning Commission Regular Meeting (7:00 pm)

**MONTGOMERY COUNTY PLANNING COMMISSION
CONSENT AGENDA
March 21, 2012**

A. APPROVAL OF MINUTES

- February 8, 2012

ISSUE/PURPOSE:

The above listed minutes are before the Planning Commission for approval.

B. SCHEDULE THE FOLLOWING ITEMS FOR PUBLIC HEARINGS BEFORE THE PLANNING COMMISSION ON APRIL 11, 2012 AND BOARD OF SUPERVISORS ON APRIL 23, 2012

A request by **Montgomery County** (Agent: Sheriff J.T. Whitt) to amend a condition of a special use permit previously approved on May 11, 2009 (R-FY-09-162) to allow microwave dishes not to exceed 2 ft. in diameter at a height to achieve direct links to other 911 facilities throughout the county. The property is located at 2080 Oilwell Road and is identified as Tax Parcel No. 066-A-55A (Acct # 071091) in the Prices Fork Magisterial District (District E). The property currently lies in an area designated as Residential Transition in the 2025 Comprehensive Plan.

AT A MEETING OF THE MONTGOMERY COUNTY PLANNING COMMISSION ON FEBRUARY 8, 2012 IN THE BOARD ROOM, SECOND FLOOR, COUNTY GOVERNMENT CENTER, CHRISTIANSBURG, VIRGINIA:

CALL TO ORDER:

Mr. Haynes, Chair called the meeting to order.

DETERMINATION OF A QUORUM:

Mr. Tuttle established the presence of a quorum.

Present: Walt Haynes, Chair
 Ryan Thum, Vice-Chair
 John Tuttle, Secretary
 Joel Donahue, Member
 William Seitz, Member
 Robert Miller, Member
 Bryan Rice, Member
 Malvin Wells, Member
 Chris Tuck, Board of Supervisors Liaison
 Steve Sandy, Planning Director
 Dari Jenkins, Planning & Zoning Administrator
 Brea Hopkins, Planning & Zoning Technician
 Jamie MacLean, Development Planner

Absent: Frank Lau, Member

APPROVAL OF AGENDA:

On a motion by Mr. Donahue, and seconded by Mr. Thum, and unanimously carried the agenda was approved.

CONSENT AGENDA:

On a motion by Mr. Miller, seconded by Mr. Seitz, and unanimously carried the consent agenda was approved.

PUBLIC HEARING:

Request by Ancient Free & Accepted Masons of Virginia Hunters Lodge (Agent: Altizer, Hodges, & Varney, Inc.) for a Special Use Permit on 0.997 acres in an Agriculture (A-1) zoning district for the operation of a civic club. The property is located at 3730 Prices Fork Road and is identified as Tax Parcel No. 52-A-15 (Acct # 000558) in the Prices Fork Magisterial District (District E). The property currently lies in an area designated as Village Expansion in the 2025 Comprehensive Plan and further described as Low Density Residential within the Prices Fork Village Plan.

Ms. Jenkins introduced the request. The property is zoned Agriculture (A-1) and is approximately 1 acre in size. She presented maps and photos of the site. The SUP would allow the construction of a one story building to conduct meetings twice per month, with possibility of

a few additional meetings per year. VDOT has indicated there is sufficient site distance for a commercial entrance. Public water can be provided; however, public sewer is not available. The proposed development appears to be compatible with the surrounding area and in compliance with the comprehensive plan. The site will have limited lighting and will require paved parking. The building will be brick with a shingle roof. The owners of Sterling Manor Subdivision have requested the applicant provide landscaping around the proposed structure to provide a more residential appearance. They have also suggested a particular tree be planted instead of the required type 2 buffer. She reviewed the proposed concept plan and discussed possible conditions to mitigate impacts.

Mr. Seitz asked why parking would be limited to 17 spaces.

Ms. Jenkins stated there were only 15-20 members, some of which car pool, and in the Agriculture area it is necessary to maintain a low area of impervious surface. Hours of operation have been discussed with the owners due to the location of the structure and nearby residences, they were in agreement with restrictions to prevent disturbance of the adjoining owners. She discussed the type 2 buffer requirements in comparison with the recommendations of the adjoining owners and noted a type 2 buffer does not require evergreens.

Mr. Thum noted the noise ordinance should address issues with the building use and hours of operation.

Mr. Rice noted the landscaping should be of a residential nature.

Mr. Miller stated by planting the evergreens on both sides, a tunnel effect would be created and would not look residential.

Ms. Jenkins noted that the dwellings proposed on the other 2 lots would be very close to the required setback.

Mr. Haynes opened the public hearing.

Mr. Bryant Altizer; Altizer, Hodges and Varney, stated the proposed tree, Arborvitae, is very good for screening because of growth rate and resistant to disease. It is a good idea to have some evergreens to balance the site. A 3 ft. tree should be plenty of height given the growth rate and should be placed 10 ft. on center to allow for growth. The type 2 buffer may have it appear more residential and could include a mixture of evergreen trees. This area is rural in nature. The fence line along the left hand side will be cleaned up on the Mason's property. Their desire is to be a good neighbor. The Masons will hold two (2) meetings a month. Each meeting is approximately three (3) hours each so the building would only be occupied approximately six (6) hours a month. The lodge itself should not have impact on the adjoining dwellings. The proposed parking totals 24% impervious surface. In general, the Masons would not use the number of proposed spaces, so the additional spaces would allow for growth.

Mr. Rice asked what type of planting is preferable for landscaping.

Mr. Altizer stated the type 2 buffer is very intensive for a residential area; however, the Masons are willing to install plantings to that requirement if necessary. They would like to do something more residential in nature and could easily substitute evergreens for some of the required buffer.

Mr. Peter Owslands, architect, noted he had larger plans available of the residential designed structure. There is not any lighting is planned for the parking area. A wall-mounted porch light will be installed.

Debbie Broce stated she was in support the Masonic Lodge. There needs to be a consideration for the safety of the members when considering lighting and landscaping. Occasionally there is

just one member on site. The lodge is very similar to a church and members contribute to many charities in the US.

Henry Pitter, member of Masonic Lodge, stated he would like to discuss the landscaping. The building closely resembles a house so it would not be appropriate to create a tunnel appearance with the trees.

A resident of Prices Fork Road stated he had concerns regarding the use of the building and parking area when the members of the lodge were not present. There may be a need to consider restricting access. In addition, Prices Fork Road traffic tends to travel faster in this area so a turn lane may need to be considered. In regards to the landscaping that has been discussed, the requirements seem to be too much and take away from the desired residential appearance.

Robert Brown, Masonic Lodge Trustees, stated the lodge has been in existence for 160 years and there should not be any disturbance to the adjoining owners.

Mr. Seitz asked how many members are there.

Mr. Brown stated there were approximately 120 members across many states. The most in attendance is around 20 members and/or guests. It should also be noted that there are not any issues at the current location with people accessing their property during their absence.

There being no additional comments the public hearing was closed.

Mr. Miller stated the Masons have brought forward a good plan. There is not a need for an excessive forest to hide it since it has a residential appearance.

Mr. Thum noted he did not see any reason to limit activities since there are other ordinances to control noise. The hours could be limited to 7 am to 11:00 pm.

Mr. Seitz stated he fully supports the proposed development.

Mr. Haynes stated he was also in support of the project.

A motion was made by Mr. Miller, seconded by Mr. Wells to recommend approval of the Request by Ancient Free & Accepted Masons of Virginia Hunters Lodge (Agent: Altizer, Hodges, & Varney, Inc.) for a Special Use Permit on 0.997 acres in an Agriculture (A-1) zoning district for the operation of a civic club with the following conditions:

1. This Special Use Permit (SUP) authorizes the construction and use of a building as a "civic club" for the Ancient Free & Accepted Masons of Virginia Hunters Lodge #156 along with associated parking and accessory structures on property located at 3730 Prices Fork Road and is identified as Tax Parcel No. 52-A-15 (Acct # 000558) in the Prices Fork Magisterial District (District E).
2. The site shall be developed in substantial conformance with the concept plan entitled "Proposed Building, Hunters Masonic Lodge, Montgomery County, Virginia", prepared by Altizer, Hodges, & Varney, Inc., dated January 02, 2012.
3. A detailed site plan in conformance with zoning ordinance requirements shall be submitted and approved by the zoning administrator and all other necessary local and state agencies prior to issuance of building permits for this development.
4. The use of the building for meetings, group activities, etc. shall be limited to the hours of 7:00 a.m. until 11:00 p.m.

5. Any lighting installed on the property shall be dusk to dawn, "full cut-off" type fixtures to avoid glare onto adjacent properties and shall comply with Montgomery County Zoning Ordinance 10-46(9) Performance Standards.
6. Landscaping shall be provided around the proposed building to provide a residential appearance.

Ayes: Rice, Haynes, Thum, Donahue, Seitz, Miller, Tuttle, Wells

Nayes: None

Abstain: None

An ordinance amending Chapter 10 Entitled Zoning, Section 10-37, Article II Section 2.1(a) of the Code of the County of Montgomery, Virginia by amending the language referencing the maps dated September 29, 2009, to include "and any subsequent revisions or amendments thereto".

Ms. Jenkins stated FEMA was requesting an amendment to add language "and any subsequent revisions or amendments thereto" to Section 10-37, Article II Section 2.1(a) of the zoning ordinance.

Mr. Seitz exited the meeting.

Mr. Haynes opened the public hearing; however, there being no speakers the hearing was closed.

A motion was made by Mr. Miller, seconded by Mr. Rice to recommend approval of An ordinance amending Chapter 10 Entitled Zoning, Section 10-37, Article II Section 2.1(a) of the Code of the County of Montgomery, Virginia by amending the language referencing the maps dated September 29, 2009, to include "and any subsequent revisions or amendments thereto".

Ayes: Rice, Haynes, Seitz, Miller, Lau, Tuttle, Wells

Nayes: Thum, Donahue

Abstain: None

Mr. Thum and Mr. Donahue noted they felt that the amendment was not a legitimate request by FEMA.

Mr. Seitz returned.

Montgomery County requests an amendment to the Comprehensive Plan to incorporate the Lafayette Route 11/460 Corridor Plan into the existing Elliston & Lafayette Village Plan. The proposed amendment will revise the proposed future policy map of the area along Route 11/460 from Roanoke County line to the intersection with the NS Railroad by designating properties on the future policy map as Planned Light Industrial/Commercial, Commercial, Low Density Residential or Medium Density Residential. This plan also serves to amend the Village Transportation Links Plan (VITL) for this corridor area adopted in 2007 by adding additional pedestrian accommodation considerations.

Mr. Sandy reviewed discussions from the previous meetings held regarding the Lafayette Corridor plan. Notices regarding the public hearing were mailed to people who had attended workshops and legal notice was placed in the newspaper. This area is experiencing changes in land uses and transportation. The purpose of this plan is to prepare for change and capitalize on future opportunities. He reviewed the key issues identified by property owners and the

planning commission. The plan includes revisions to land use categories including a Planned Light Industrial/Commercial district to encourage modern clean industrial and commercial businesses which can bring high employment to the area. Standards for the residential land uses were amended. This plan would revise the current village plan land use designations and integrates recommendations from the VITL Plan.

Mr. Donahue noted a correction was necessary to figure 12, page 16. The label needs to be corrected to read "Tennessee" not "Kentucky".

Mr. Haynes opened the public hearing;

Ms. Marlene Taylor, owner of property located at the intersection of North Fork Road and Route 460, stated she was very pleased with some proposed changes. She asked if property owners would have to incur the costs of rezoning since it is very expensive. She also noted the need to join the two (2) halves of Route 603 and stated she was concerned about the need for a traffic light at the corner of Route 460 and North Fork Rd. Traffic is very heavy in this area and moves at high rate of speed.

Mr. Sandy stated the proposed plan would not rezone property. Any rezoning would need to be initiated by the land owners.

There being no additional speakers the hearing was closed.

Mr. Donahue asked what impacts the corridor plan would have if accepted.

Mr. Sandy noted the corridor plan does not rezone property. The only means to rezone would be for landowners to initiate the request or for the Board of Supervisors to initiate a comprehensive rezoning which is not common. In regards to concerns of a traffic light, VDOT has stated it is not warranted.

Mr. Wells noted that if the intermodal facility is constructed, VDOT may consider a traffic signal.

A motion was made by Mr. Donahue, seconded by Mr. Rice to recommend approval of Montgomery County requests an amendment to the Comprehensive Plan to incorporate the Lafayette Route 11/460 Corridor Plan into the existing Elliston & Lafayette Village Plan. The proposed amendment will revise the proposed future policy map of the area along Route 11/460 from Roanoke County line to the intersection with the NS Railroad by designating properties on the future policy map as Planned Light Industrial/Commercial, Commercial, Low Density Residential or Medium Density Residential. This plan also serves to amend the Village Transportation Links Plan (VITL) for this corridor area adopted in 2007 by adding additional pedestrian accommodation considerations.

Ayes: Rice, Haynes, Thum, Donahue, Seitz, Miller, Lau, Tuttle, Wells
Nays: None
Abstain: None

PUBLIC ADDRESS:

Mr. Haynes opened the public address; however, there being no speakers the public address session was closed.

WORKSESSION:

On a motion by Mr. Thum, seconded by Mr. Rice and unanimously carried, the planning commission entered into worksession.

Safe Route To Schools Projects (Jamie MacLean)

Auburn Elementary & Middle School

Belview Elementary

Mrs. Maclean stated staff was working with the PDC on Safe Route To School (SRTS) travel plans for Auburn Elementary, Auburn Middle, and Belview Elementary. The purpose of SRTS is to ensure that children have the option to walk and/or bike safely to school. Funding is available for infrastructure activities. The focus area is a two (2) mile radius around each of the schools. Taskforce committees have been formed for both projects, and meetings have begun. Surveys will be distributed to parents and classrooms and a public meeting for each project will be held to give the community an opportunity to provide feedback. Draft travel plans will be completed in March

NRV Livability Initiative

Ms. Maclean showed a brief video produced by the PDC and noted there are several work groups which have been meeting.

On a motion by Mr. Thum, seconded by Mr. Seitz and unanimously carried, the planning commission exited worksession.

LIAISON REPORTS:

Board of Supervisors- Mr. Tuck discussed the Harvey park property which was previously offered as a donation to the county for a public park. The issue has not been brought back to the board as of this date; however, it is rumored that it will be re-introduced.

Agriculture & Forestal District- No report.

Blacksburg Planning Commission-- No report.

Christiansburg Planning Commission-- No report.

Economic Development Committee- Mr. Tuttle reported that the Economic Development Committee took a tour of Price's Fork Elementary.

Public Service Authority-- Mr. Wells reported the PSA met. VDOT is still working on the sewer at the rest area. Alliant will no longer be at the arsenal. Paperwork has not been completed with the proposed contractor; however, they are willing to work with the PSA to continue to provide service.

Parks & Recreation Commission- Mr. Thum stated VT assisted on research regarding youth football helmets. They help to get the study out to the public and are working with Parks and Recreation to get new helmets.

Radford Planning Commission- No report.

School Board- Mr. Seitz reported the School Board discussed their proposed budget.

Transportation Safety Committee- No report.

Planning Director's Report- No report.

There being no further business the meeting was adjourned at 8:50 pm.



MONTGOMERY COUNTY DEPARTMENT OF
PLANNING & GIS SERVICES

PLANNING
GIS & MAPPING

755 ROANOKE STREET, SUITE 2A, CHRISTIANSBURG, VIRGINIA 24073-3177

MEMORANDUM

TO: Planning Commission

FROM: Planning Staff *[Signature]*

DATE: March 14, 2012

RE: **Safe Routes to Schools-Auburn Elementary & Middle**

Montgomery County is partnering with Auburn Schools and the New River Valley Planning District Commission to develop a Safe Routes to School (SRTS) Program.

The first step for developing a Safe Routes to School Program is for a school or community to develop a School Travel Plan. A Travel Plan outlines intentions for making travel to and from school by bike or walking a safe option. After the travel plan has been finalized and accepted by VDOT, Montgomery County and Auburn Schools have the option to pursue grant funding to provide infrastructure near the school to accomplish the goals of the travel plan.

In late January 2012, a taskforce was formed to work on the travel plan for the Auburn Schools. The taskforce included Montgomery County School Board and Planning staff, as well as Planning District Commission (PDC) staff. The Auburn Middle principal, Auburn Elementary principal, representatives from the Montgomery County Sheriff's Department, and the Virginia Department of Transportation (VDOT) were also an integral part of the taskforce. The taskforce had a series of four (4) meetings to discuss the components of the travel plan and provide Planning and PDC staff with the information needed to draft the travel plan.

Some of the highest priority barriers that the taskforce identified were:

- 1- Drop-off and pick-up process creates congestion and unsafe behaviors
- 2- Missing or insufficient walkways, sidewalks, and paths
- 3- A major roadway divides the school from residential areas – VA Primary Rt. 8
- 4- Crossing streets and intersections is difficult or dangerous

The main goals identified by the taskforce were:

- 1- Improve existing drop off/pick up area
- 2- Provide pedestrian and cyclist friendly connections to nearby neighborhoods
- 3- Install a safe crossing and sidewalks along Route 8

Surveys were also sent home to the parents and guardians of all students in the Auburn Elementary and Auburn Middle Schools to assess interest and determine how children currently arrive at school. Those surveys are still being processed. Both schools also provided information regarding the transportation of their students.

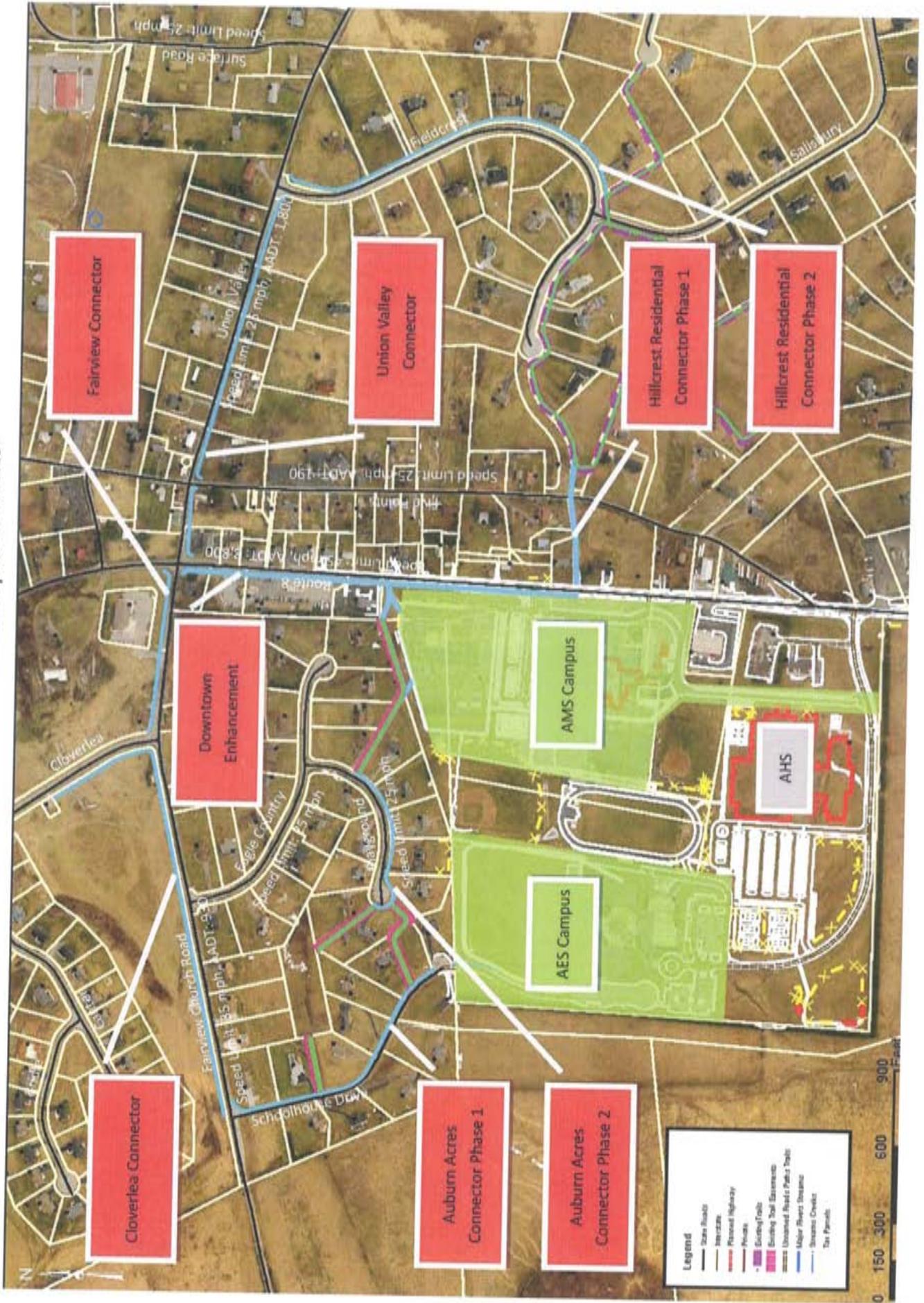
Planning and PDC staff will host a community open house on March 15, 2012, to provide an opportunity to answer any questions and gather feedback from school personnel, the community, and parents of school children.

A draft of the SRTS infrastructure plan and Travel Plan has been prepared by the PDC and is included for your review. This plan attempts to identify the issues specific to Auburn Schools, and look at possible options for safer walking and biking paths to and from the campus. Staff would welcome any suggestions or feedback.

After the draft plan has been completed, PDC and Planning Staff will submit the plan to VDOT for review and approval. When Montgomery County has an approved travel plan, PDC and Planning Staff can move forward to apply for federal grant money to implement some of all of the proposed infrastructure improvements around the Auburn Schools. As part of our application to VDOT, staff would like to request that the Planning Commission consider endorsing the travel plan prior to its submittal to VDOT for review.

Attachments: SRTS Auburn Infrastructure Draft Plan
Auburn Draft Travel Plan

Auburn Campus Proposed Off-Campus Infrastructure Improvements



THE VIRGINIA SCHOOL TRAVEL PLAN

Auburn Campus

April 20, 2012



Safe Routes to School Travel Plan
Auburn Campus

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Section 1 – Introduction

Auburn Elementary and Auburn Middle School is committed to ensuring that all our students can utilize *physically active transportation*, such as walking and bicycling, for a safe and enjoyable trip to school. This School Travel Plan aims to address the issues that impede active transportation and seeks to strategically solve these problems by implementing a Safe Routes to School program.

Our community is motivated to pursue Safe Routes to School because:

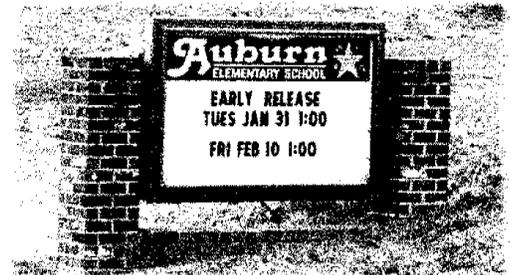
- We highly value student activity and health
- We want to improve the air quality and environment around the schools
- We wish to improve unsafe or insufficient walkways, bikeways, and crossings
- We are committed to reducing speeding and reckless driving near schools

Section 2 – Safe Routes to School Team

We believe that a diverse Safe Routes to School Team develops the most successful School Travel Plans. Our Team is comprised of a variety of stakeholders, each lending their own unique perspective and expertise in order to make walking and bicycling to school more safe, accessible and fun for our students.

The members of our team include:

- Brea Hopkins, Planning and Zoning Technician, Montgomery County
- Marcia Settle, Principal, Auburn Elementary School
- Guylene Wood Setzer, Principal, Auburn Middle School
- Laura Williams, Grant Writer/Research Proposals, Mont. Co. Public Schools
- Lt. James Bowyer, Supervisor & Crime Prevention Specialist, Sheriff's Office
- Jason West, School Resource Officer, Sheriff's Office
- Steven Sandy, Planning Director, Montgomery County
- Elijah Sharp, Regional Transportation Planner, NRV Planning District Commission
- J. Kelly Dunn, Engineering Project Manager, Anderson & Associates
- David Clarke, VDOT, Christiansburg Residency Office
- Neil Turner, Emergency Services Coordinator, Montgomery County
- Melanie Smith, Healthy Kids Campaign Organizer, Virginia Faith Center



Section 3 – The Public Input Process

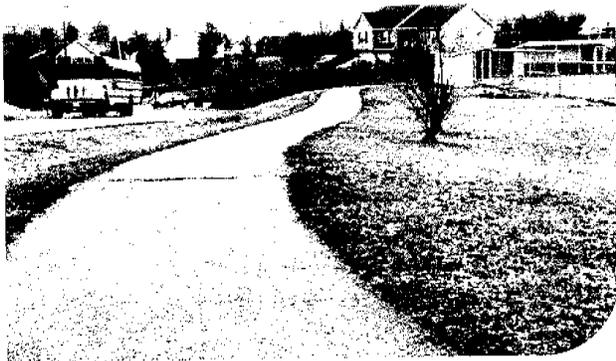
Our Team worked to include the entire community in developing our School Travel Plan. To accomplish this, we:

- Administered parent surveys
- Interviewed key stakeholders
- Conducted a community walkabout/bikeabout along potential routes
- Incorporated existing bike or pedestrian plan recommendations
- Incorporated out School Wellness Policy objectives
- Hosted a public meeting
- Solicited student opinions

Section 4 – Description of School

Our School Travel Plan addresses the needs of multiple schools in close proximity. The Auburn Campus includes the area's Elementary, Middle, and High Schools.

Auburn Elementary was constructed in 1998 and has a current enrollment of 543 students. The school motto is "Where every child is a star." AES has the firm belief that each child can learn and has considerable value to contribute to our school and



community. In addition, the faculty and staff has the firm conviction to ensure that each child is able to reach his or her potential. Currently, 47% of students receive free or reduced lunch, 7.2% are gifted, and 7.7% require special education.

Auburn Middle School opened in 1990 and has 340 students. The school motto is "Students first!" AMS believes that all students can learn, and that a safe and comfortable environment is the chief priority. AMS has identified that students learn in different ways and each will be provided with opportunities

to apply their knowledge in a meaningful context. Currently 45.11% of students qualify for free or reduced lunch. Nutrition and exercise is provided through activities in PE and Health class. Due to excessive capacity, AMS will be moving into the old High School (once the new High School is constructed).

Section 5 – Current Travel Environment

A. How Students Regularly Travel to School

This is how all of our students (K-8) regularly travel to and from school:

Travel Mode	Walk	Bike	School Bus	Family Vehicle	Carpool	Public Transit	Other	Total
Number of Students	1.8%	0%	65.3%	31.9%	1.0%	0%	0%	880

Source: Student Tally Sheet, March 2012 (approximately 50% of students, average between AMS and AES).

B. Distances Students Live From School

These are the distances all of our students live from their school:

Distance lived from school	Less than .5 mile	.5 mile to 1 mile	From 1 to 2 miles	<u>More than 2 miles</u>
Number of Students	60	96	107	617

Source: Montgomery County Public Schools, February 2012

C. Activities in Place During Student Travel Times

We have the following supports or activities in place during student travel times:

- Police department support (part-time)
- School flashing beacons
- Staff presence during drop-off/pick-up

D. Current Activities to Enhance Safe and Active Student Travel

The Auburn area currently lacks supporting facilities to encourage student travel. Currently, bus safety training is provided on an annual basis.

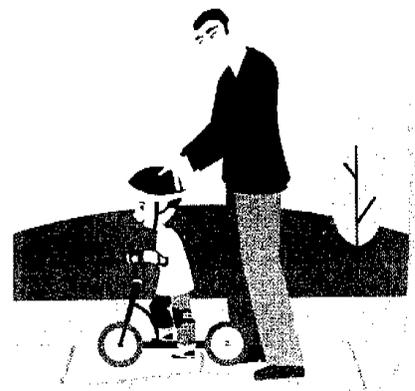
E. Current School Travel Policies

Auburn Elementary School currently has a policy, based on existing safety concerns, that strongly recommends no student be allowed to walk or ride a bicycle to or from school. Auburn Middle School currently has students walking to school despite the lack of proper facilities. Each school has an arrival and dismissal procedure that is highlighted in section 5G.

Auburn Elementary and Auburn Middle currently follow the Montgomery County Wellness Policy. The School Board is committed to providing school environments that promote and protect staff members' and children's health, well-being, and ability to learn by supporting healthy eating and physical activity. The School Board consulted with students, parents, staff, food service professionals, health professionals, and other interested community members to develop the policy.

The development and adoption of the policy is mandated by the Child Nutrition and WIC Reauthorization Act of 2004 and is established in accordance with the United States Department of Agriculture regulations and guidance, and existing Virginia regulations and guidance – as they apply to school nutrition programs. The Wellness Policy Goals include:

1. The Montgomery county Child Nutrition Program will comply with federal, state, and local requirements and be accessible to all children.
2. All schools will provide adequate time for students to eat in clean, safe, and pleasant settings.
3. All foods and beverages provided by the school during the school day should be consistent with the most recent nutrition recommendations of the U. S. Dietary Guidelines for Americans to foster lifelong habits of healthy eating for staff, students, and their families.
4. Schools will provide sequential and interdisciplinary nutrition education Schools will provide sequential and interdisciplinary nutrition education based on the most recent nutrition recommendations of the *U.S. Dietary Guidelines for Americans* to foster lifelong habits of healthy eating for staff, students, and their families.
5. All staff and students in grades K-12 will have opportunities, support, and encouragement to be physically active on a regular basis.
6. All schools will provide developmentally appropriate physical education as defined by state guidelines, which will include opportunities to foster lifelong habits of physical activity.
7. In order to help staff and students establish patterns of meaningful physical activity in their lives outside the classroom, all schools will form partnerships with relevant community resources to provide physical activity experiences for all community members at school and in the community.
8. The School Board encourages and supports each staff member to serve as a healthy role model.
9. All schools will work in collaboration with parents, staff and community agencies to promote mental health as part of a total approach to wellness.
10. The School Board will collaborate with the community in its health and wellness endeavors.
11. All school-based activities will be consistent with local wellness policy goals.
12. School personnel are encouraged to use non-food rewards and refrain from using physical activity as a consequence.

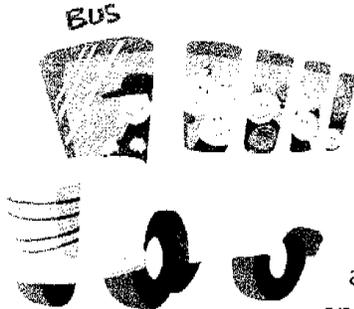


F. Existing bus Service

Our school does provide bus service to every student. Currently 65% of students utilize the existing bus service, 32% of students arrive in a family vehicle.

G. Arrival and Dismissal Procedures

Both Auburn Elementary School (AES) and Auburn Middle School (AMS) have arrival and dismissal policies in place.



AES: In general, school buses arrive between 8:15 am and 8:55 am, and are dismissed at 3:30 pm. Private vehicles arrive between 8:30 am and 9:00 am, and are dismissed at 3:15 pm. The Adventure Club meets before school between 6:00 am and 8:30 am.

AMS: In general, school buses arrive between X am and X am, and are dismissed at x pm. Private vehicles arrive between X am and X am, and are dismissed at X pm. Organizations/Clubs meet before school between...

Section 6 – Barriers to Active Transportation

We have identified and prioritized the following barriers to walking and bicycling to school:

High Priority Barriers:

1. Drop-off and pick-up process creates congestion and unsafe behaviors
2. Missing or insufficient walkways (sidewalks and paths)
3. Crossing streets and intersections is difficult or dangerous
4. A major roadway divides the schools from residential areas
5. Dangerous driving and speeding on streets

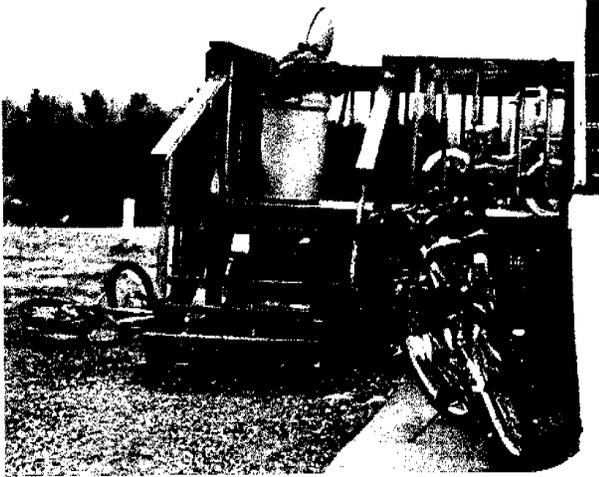
Low Priorities:

1. Walkways are not accessible to students with disabilities
2. Bike parking at schools is missing
3. School policies ban or prohibit walking and bicycling
4. Public safety concerns
5. Significant traffic crashes within 2-miles of schools over the last 3 years.
6. Local ordinances negatively impact pedestrians and bicyclists



Section 7 – Creating Solutions

Our primary goals for active transportation are: (1) improving the safety of walking and bicycling students, and (2) increasing the number of students walking and bicycling to school.



We have identified strategies involving the 5 “E’s” of Safe Routes to School to address the identified barriers to walking and bicycling in our school community and to achieve our stated goals. **We have selected at least one strategy from each of the categories of Education, Encouragement, Enforcement and Evaluation**, in addition to any Engineering strategies that are indicated. The strategies are outlined in sections 7A – 7E below.

A. Education Strategies

Educational strategies for the Auburn Campus include:

- Teach pedestrian safety and bicycle safety skills to students
- Organize a Bicycle Rodeo or training course to teach on-bike skills
- Teach the health, environmental and sustainable transportation benefits of walking and bicycling to students and parents
- Educate parents and caregivers about safe driving procedures at the schools
- Train school and community audiences about Safe Routes to School

B. Encouragement Strategies

Encouragement strategies for the Auburn Campus include:

- Start a Walking School Bus Program
- Promote Safe Routes to School in the Community
- Conduct a community safe driving awareness and education campaign

C. Enforcement Strategies

Enforcement strategies for the Auburn Campus include:

- Creating a safety patrol
- Supply equipment for new adult crossing guard
- Lower speed limits in School vicinity

D. Evaluation Strategies

Evaluation strategies for the Auburn Campus include:

- Counting the number of students who walk and bicycle to and from school
- Measuring parent/guardian perceptions of safety

E. Engineering Strategies

Engineering strategies for the Auburn Campus include:

- Construct, replace, improve, or repair sidewalks
- Install traffic calming measures (curb extensions, raised crosswalks, etc.)
- Build off-street walking/bicycling paths
- Install, enhance or repair crosswalks
- Install new or improved signage (school zone, speed limits, and crosswalk)
- Install new or improved pavement markings or legends
- Install bicycle parking near schools (bike racks)
- Install median refuges for street crossings
- Install traffic control devices (pedestrian signals, flashing beacons, etc.)
- Increase safety and access for students walking and biking to school by redesigning pick-up and drop-off areas



Map A
Auburn Elementary School
1/2 and 2 Mile Radius

Legend

-  Corporate Line
-  State Roads
-  Interstate Highway
-  Planned Highway
-  Private Feeds (Harrow)
-  Parkway
-  Hydrology
-  Auburn Elementary Property
-  1/2 Mile Radius (Auburn)
-  2 Mile Radius (Auburn)

Elementary School Zones

Auburn Elementary School



Project Goals
 The goal of this project is to provide a visual representation of the 1/2 and 2 mile radius around the Auburn Elementary School. This information will be used to identify areas that are within the 1/2 and 2 mile radius of the school. The information will be used to identify areas that are within the 1/2 and 2 mile radius of the school. The information will be used to identify areas that are within the 1/2 and 2 mile radius of the school.



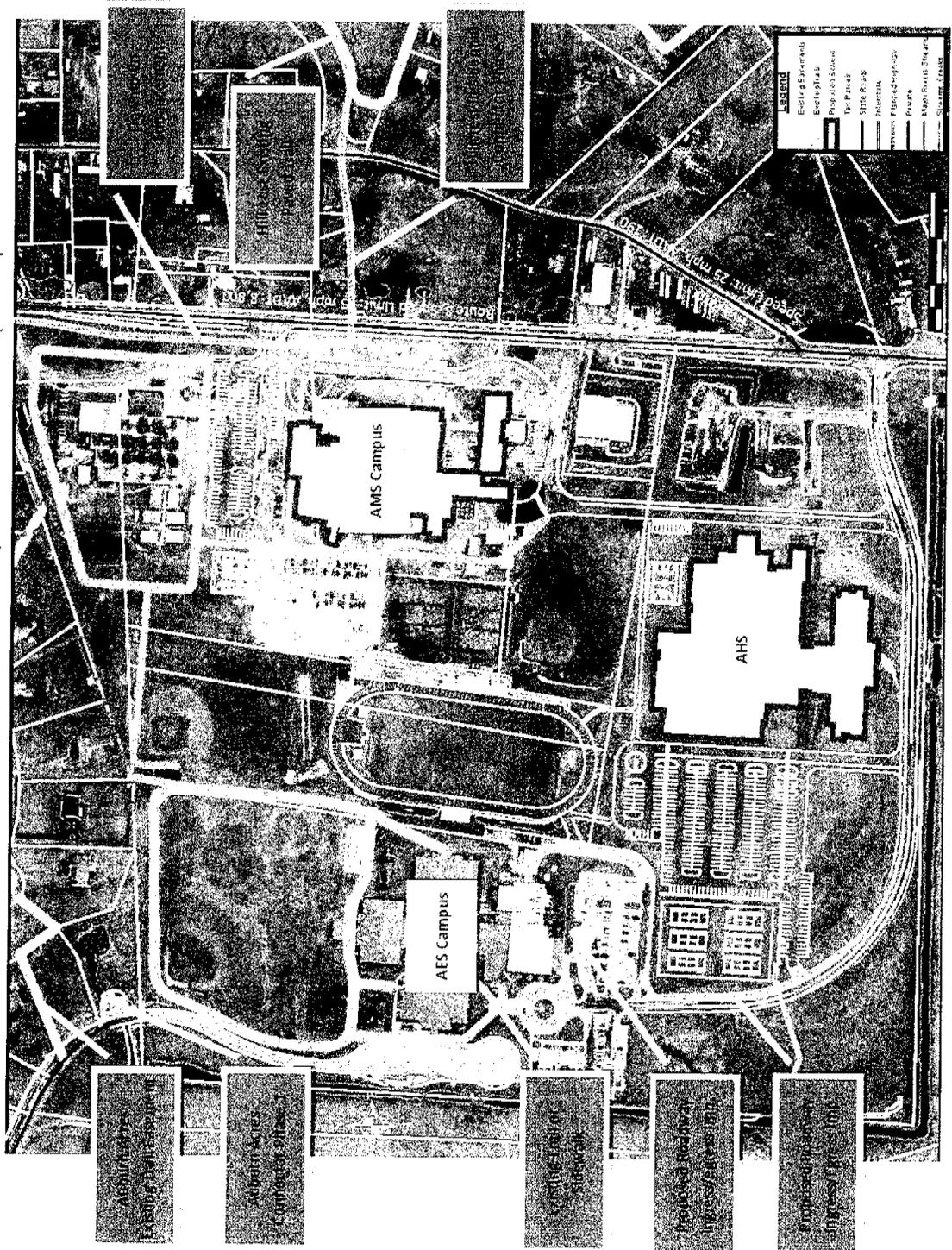
Section 8 - Mapping
 A stamp to review map

Auburn Elementary School



B. Existing Infrastructure & Around-Campus Improvements

Auburn Campus Existing Infrastructure & Proposed Around-Campus Improvements



Section 9 – The Action Plan

The Safe Routes to School Team is committed to realizing our vision for a safe, enjoyable and accessible walking and bicycling environment for our students. We will utilize the following Action Plan to keep our efforts focused and on track:

Auburn Campus Safe Routes to School - Action Plan								
	Strategy Name	Strategy Detail	Time-frame	Responsible Party	Status	% of Students Affected	Estimated Cost	Funding Source
Educational	Teach pedestrian safety and bicycle safety skills to students and parents.	Local Sheriff's department staff and/or bicycle organization safety training staff will be invited to a school-wide assembly and/or a booth will be set up at the "Meet the Teachers Night."	Annual	AES, AMS, MCSO, Local Organizations	Active	100%	\$500	SRTS, Local Organizations, AMS, AES, MCSO
	Organize a Bicycle Rodeo or training course to teach on-bike skills.	Event to be held at AES/AMS and local police department and/or bicycle organization volunteers will inspect bikes for safety. Activities would tie into existing P.E. curriculum.	12 months	AES, AMS, MCSO, Local Organizations	Not yet begun	25% - 30%	\$2,000	SRTS, Local Organizations
	Teach the health, environmental and sustainable transportation benefits of walking and bicycling to students and parents.	AES/AMS will work with VDOT to develop educational materials about the beneficial impacts of a successful SRTS program. Articles will be featured in the school newsletters.	Every 2 months	AES, AMS	Active	100%	\$500	SRTS, AES, AMS, PTO
	Educate parents and caregivers about safe driving procedures at the schools.	Materials regarding driving procedures for AES and AMS will be developed and sent home with students. The local YOVASO clubs could help lead the process.	Ongoing	AES, AMS, State Police, MCSO	Active	100%	\$3,000	SRTS, AES, AMS, Mont. County
	Train school and community audiences about Safe Routes to School.	AES/AMS will provide information about the SRTS program at school functions. The principal will include content during the beginning of the year expectations presentation to each grade level, and create lessons for P.E. classes.	Ongoing	AES, AMS, Local Organizations	Active	40% - 100%	\$1,000	SRTS, Local Organizations
Encouragement	Start a Walking School Bus Program	AES/AMS/PTO will work with the local community areas identified in the School Travel Plan to establish a Walking School Bus Program.	48 months	PTO, Local Organizations, Community (existing HOAs, etc.)	Not yet begun	5% - 10%	\$0	Local Community
	Promote Safe Routes to School in the Community	AES/AMS/PTO will annually send educational materials home with students and invitations to special training/programs.	12 months	AES, AMS, PTO	Not yet begun	20% - 100%	\$500	SRTS
	Conduct a community safe driving awareness and education campaign	AES/AMS will work with YOVASO, the local Sheriff's department, and Montgomery County to develop a program.	24 months	AES, AMS, MCSO, YOVASO	Not yet begun	100%	\$1,000	SRTS, Local Businesses

Auburn Campus Safe Routes to School - Action Plan (Continued)

	Strategy Name	Strategy Detail	Time-frame	Responsible Party	Status	% of Students Affected	Estimated Cost	Funding Source
Enforcement	Create a safety patrol.	AES will initiate a student safety patrol program. 5th graders will be trained by local Sheriff's department officers to serve as safety patrols with equipment provided by SRTS funds.	12 months	AES, MCSO	Not yet begun	100%	\$1,000	SRTS
	Supply equipment for new adult crossing guards.	Purchase equipment such as: reflective white gloves and vests for crossing guards.	48 months	MCSO	Not yet begun	5%	\$1,000	SRTS, MCSO
	Lower speed limits in School vicinity.	Montgomery County will continue ongoing correspondence with VDOT to lower the speed limit within School Zone and Village Area.	12 months	VDOT, Mont. County	Negotiation Underway	100%	\$0	VDOT
Evaluation	Counting the number of students who walk and bicycle to and from school.	AES/AMS will maintain records on student arrival and departure.	Ongoing	AES, AMS	Active	100%	\$0	AES, AMS
	Measuring parent/guardian/student perceptions of safety.	AES/AMS will work with Montgomery County to improve Safe Routes to School. Assess based on parent/guardian feedback. Information will be collected by utilizing electronic listserv and take-home surveys.	48 months	AES, AMS	Not yet begun	70% - 100%	\$500	AES, AMS, SRTS
Engineering	Hillcrest Residential Connector Phase 1.	Construct a multipurpose trail - connecting the existing Hillcrest trail system to the Auburn School Campus. Install a crosswalk along Route B that includes a pedestrian refuge area, pedestrian activated traffic control devices, reflective pavement markings, and new/improved signage.	36 months	Montgomery County	Not yet begun	4%	\$275,000	SRTS, Mont. County
	Hillcrest Residential Connector Phase 2.	Construct an ADA compliant sidewalk along Fieldcrest Drive that connects the existing Hillcrest trail system to Union Valley Drive.	48 months	Montgomery County	Not yet begun	4%	\$125,000	SRTS, Mont. County
	Union Valley Connector	Construct an ADA compliant sidewalk along Union Valley Drive between Fieldcrest Drive and Route B.	48 months	Montgomery County	Not yet begun	3% - 10%	\$150,000	SRTS, Mont. County
	Auburn Acres Connector Phase 1.	Construct an ADA compliant sidewalk along Schoolhouse Drive - connecting the existing trail system at AES to Fairview Church Road. Existing Trail easements are located in the Auburn Acres area.	36 months	Montgomery County	Not yet begun	1% - 4%	\$125,000	SRTS, Mont. County
	Auburn Acres Connector Phase 2.	Construct an ADA compliant sidewalk along Playground Court - connecting existing trail easements to the Auburn School Campus.	48 months	VDOT/Mont. County	Not yet begun	2%	\$70,000	SRTS, Mont. County
	Cloverlea Connector	Construct an ADA compliant sidewalk along Fairview Church Road and Cloverlea Drive from Center Drive to Schoolhouse Drive - connecting Cloverlea to the Auburn Campus.	60 months	Montgomery County	Not yet begun	3%	\$200,000	SRTS, Mont. County
	Downtown Enhancement	Construct a multipurpose sidewalk along Route B from Fairview Church Road to the Auburn Campus.	60 months	Montgomery County	Not yet begun	1%	\$500,000	SRTS, Mont. County
	Fairview Connector	Construct an ADA compliant sidewalk along Fairview Church Road between Cloverlea Drive and Route B.	60 months	Montgomery County	Not yet begun	1%	\$85,000	SRTS, Mont. County
	Construct a formal pick-up/drop-off area.	Construct a covered walkway at AES.	36 months	Montgomery County	Not yet begun	32%	\$45,000	SRTS, Mont. County
	Improve ingress/egress during AES pick-up/drop-off procedures.	Construct a second lane of roadway from the proposed High School entrance into the AES parking area.	60 months	Montgomery County	Not yet begun	50%	\$95,000	SRTS, VDOT, Mont. County

Section 10 – Plan Approval

We believe that building a strong partnership between schools, local governments, local organizations/businesses, and the surrounding community is fundamental to the success of a School Travel Plan. We have included endorsements from the following:

- Auburn Elementary School Principal, Marcia Settle
- Auburn Middle School Principal, Guylene Wood Setzer
- Montgomery County Public Schools Superintendent, Brenda Blackburn
- Montgomery County Administrator, Craig Meadows
- Montgomery County Planning Commission
- Montgomery County Planning Department Director, Steven Sandy
- Blacksburg-Christiansburg-Montgomery Area Metropolitan Planning Organization Executive Director, Dan Brugh
- New River Valley Planning District Commission Executive Director, Kevin Byrd

Section 11 – Supporting Documents

The following supporting documents are included in Section 11 of the Plan:

- Village Transportation Links Plan – Riner Village Area
- Regional Bikeway, Walkway, Blueway Plan – Regional Priorities
- Teacher Student Tally Results
- Parent Survey Results
- School Wellness Policy

A. Village Transportation Links Plan – Riner Village Area

1. VILLAGE PROFILE

The Village of Riner is located along Rt. S, south of Christiansburg. Though currently one of the smallest Villages in the County in land area, much of the undeveloped land is already platted for subdivision lots that, once built out, will triple the size of the community. With this increased development comes the opportunity to connect current and future residents to centers of activity within the Village. Riner is unique in that it has an elementary, middle and high school in one location that is a “campus.” The challenge, however, is connecting residents from the surrounding subdivisions to this important community facility. At present, there are primary residential areas located opposite the schools along Route S, a heavily trafficked thruway that connects Christiansburg to Floyd County. Some residential development is also currently taking place on the western side of Route 8 in Cloverlea, but no pedestrian or bicycle connections currently exist to the school. The existing Hillcrest subdivision has privately constructed trails, which can serve as a model for future trail development within the Village.

2. CONNECTIVITY ISSUES

The following issues were expressed in the community workshops:

- Develop a safe crossings of Route 8
- Intersection and pedestrian safety improvements at the Rt. S / Union Valley/Fairview Church Road intersection
- Connect existing and proposed subdivisions to the Village and the schools
- Improve connections within the school campus
- Develop appropriate standards for incorporating bicycle and pedestrian amenities into new development
- Connect food store and market shops along Route 8
- Connect subdivisions together and across Route 8
- Sidewalks on Route 8 and connect to Historic District

3. VITL CONCEPT

The primary issue addressed was incorporating bicycle and pedestrian linkages along route 8 with a paved shoulder and buffered sidewalk within the village core (see standard D) to connect important community focal points, such as the schools and commercial areas. Additional linkages were provided to connect trail networks in existing and future subdivisions to the schools. These linkages are primarily off-road multi-use trails and incorporate improved crossings across Route 8 where necessary. Because of the high traffic

and high speeds along Route 8, regional networks focus on Union Valley/Fairview Church Road.

4. IMPLEMENTATION

Community members identified the following implementation priorities during the public workshops for the plan:

1. Demonstration project: Develop safe crosswalk improvements at the Union Valley/Route 8 intersection as part of a future roundabout
2. Connect Five Points Road to the schools
3. Construct sidewalk and improve the crossing to connect the market to the schools
4. Construct 'B' standard network from the cul-de-sac in Cloverlea to Auburn Hills and improve crossing (group suggested B standard) at Rt 8
5. Construct facilities, including B standard crossing, to connect Cloverlea at the proposed road connection to the east end of the village.

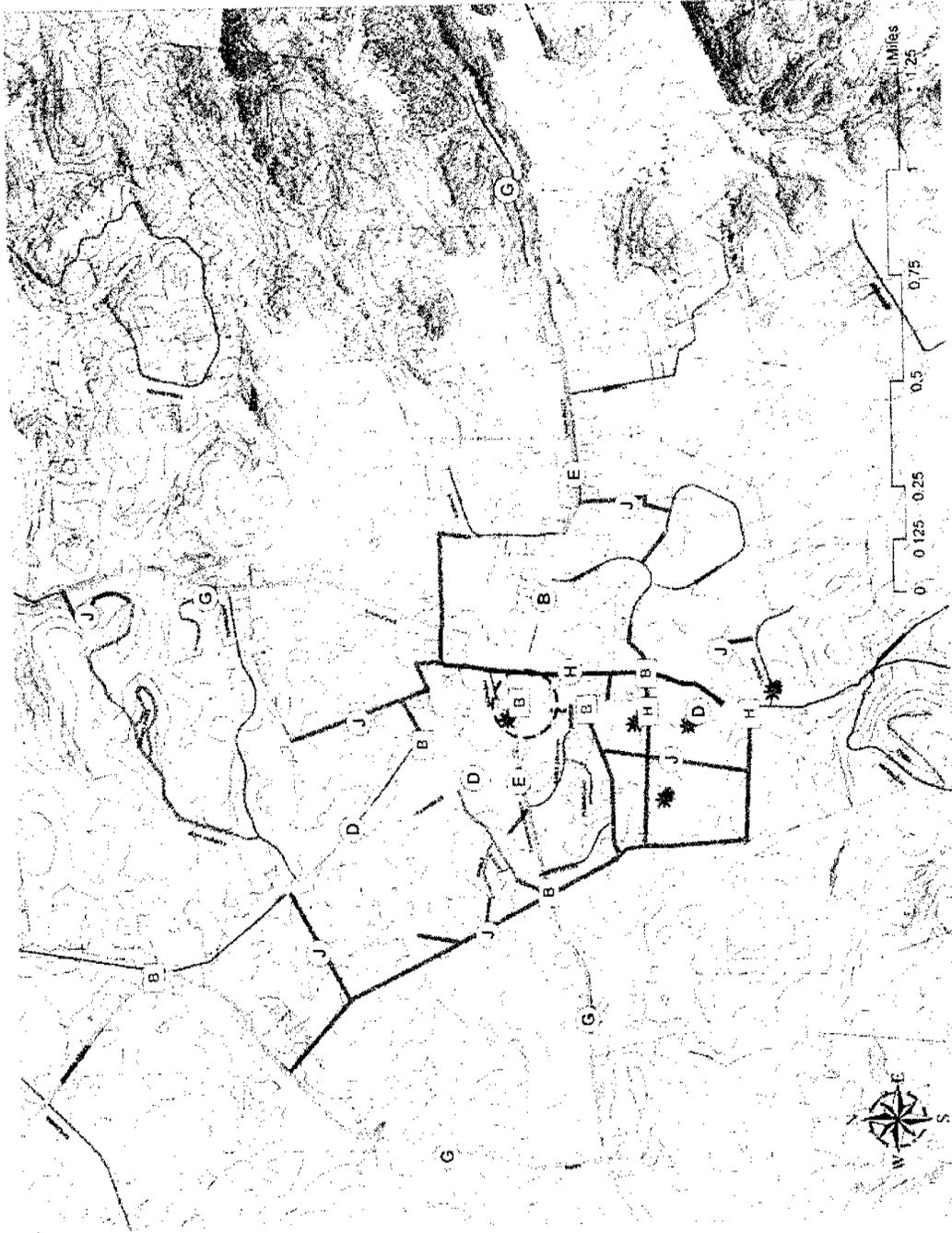
Traffic calming along Route 8 is an important consideration for implementing the Riner VITL. The Virginia Department of Transportation has identified the need to improve the Union Valley/Route 8 intersection. However, due to lack of funding, the improvement has been tabled for the time-being. This plan recommends constructing a roundabout at the intersection of Union Valley and Route 8 with appropriate bicycle and pedestrian facilities to calm traffic along this high-speed, high-traffic route to improve the overall cycling and pedestrian environment within the Village. By policy, VDOT is required to investigate the feasibility of a roundabout as an alternative to installing a traffic signal. Specific challenges at this intersection include minimizing the impact on surrounding property owners and providing adequate site distance for vehicles approaching the roundabout on Route 8. Both pedestrian and bicycle safety and site distance can both be improved by slowing vehicle traffic on Route 8 through Riner. One possibility is to install gateway treatments such as a narrow median that would slow traffic as it enters Riner north of this intersection and south of the school complex. Medians, chokers, or other traffic calming features could be used between these gateways to reduce traffic speeds along Route 8 through the Village.

Constructing chokers, medians, or other points of traffic calming along Route 8 would also provide ideal locations for pedestrian crossings of Route 8 to better connect residences to the school complex, market, and other shops along Route 8. Because points of traffic

calming reduce speeds and require drivers to be more alert, pedestrians will be safer and more visible at these points.

In addition to the traditional funding sources indicated in the Implementation Section of this report, crossings and sidewalks within two miles of the school complex are eligible for Safe Routes to Schools grants, a new funding source dedicated towards improving walking and biking conditions around elementary and middle schools. Proposals for development in Colverlea or elsewhere in Riner provide opportunities for recommended projects to be constructed by the developer to achieve consistency with the Comprehensive Plan.

RINER
VITL FINAL DRAFT
 Includes public input from
 all community workshops



Legend

Trail Typology

- B) [Symbol]
- C) [Symbol]
- D) [Symbol]
- E) [Symbol]
- F) [Symbol]
- G) [Symbol]
- H) [Symbol]
- I) [Symbol]
- J) [Symbol]

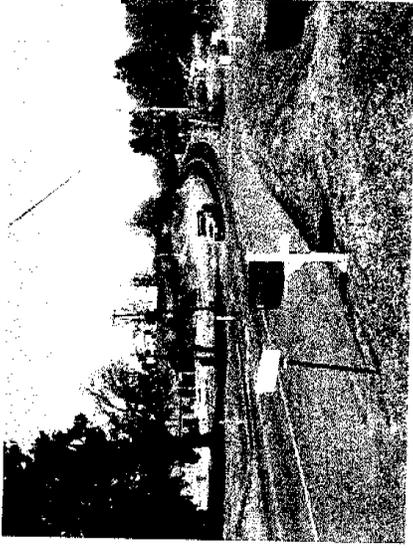
- B Potential Crossing Point
- ★ Public Facilities or Activity Centers
- Demonstration Plan Locations
- Major Rivers or Streams

Village Transportation Links Plans
 Montgomery County, VA

Herd Planning and Design
 RENAISSANCE PLANNING GROUP

3. DEMONSTRATION PROJECT

The plan recommends constructing a roundabout at the intersection of Union Valley and Route 8 with appropriate bicycle and pedestrian facilities to calm traffic along this high-speed, high-traffic route to improve the overall cycling and pedestrian environment within the village.



Existing view along Route 8 looking north toward Chambrakburg.



Proposed roundabout at the Route 8/Fairview Church intersection to calm traffic and improve bicycle and pedestrian safety along Route 8.

B. Regional Bikeway, Walkway, Blueway Plan – Regional Priorities

Tables and Maps

2011 Plan Objectives

The 2011 Plan provided the PDC an opportunity to work closely with local and regional partners. Because of this close partnership and interaction, the plan has a higher level of detail than previous plans. The final product provides the flexible framework needed to develop facilities based on local needs – while being aware of adjacent jurisdictions plans. Common interests may create opportunities for multiple stakeholders to work collaboratively on similar efforts.

This information sharing resource is intended to provide better communication with local, state, regional, and federal partners. The Plan simply adds to the framework that has been ongoing for over 40 years in the New River Valley, and will continue to improve with each plan update.

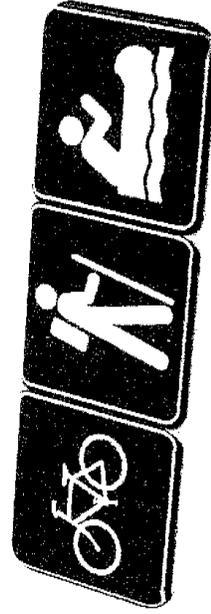


Photo by: E. Mayo

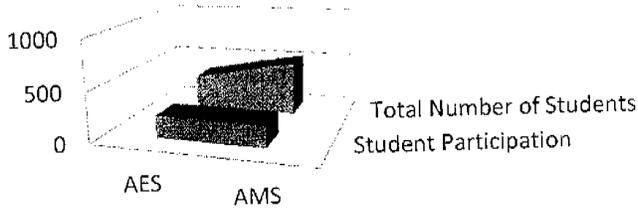
Hierarchical priorities for the Region include:

1. Projects that connect towns, villages, and community centers to existing Regional Assets (listed on pages 3-5).
2. Projects that connect more than 1 community or region.
3. Projects that provide connections to other modes of transportation (public transit, park and ride lots, public parking areas, etc.)
4. Projects that connect residential areas to a school, library, or historical place of interest.
5. Projects that connect residential areas to community assets (grocery store, employment center, etc.)
6. Projects that utilize local resources and environmental friendly practices.
7. Projects that provide access to waterways – partner with VDOT to provide access near bridges.
8. Projects that establish attractive wayfinding signage for existing and proposed assets.
9. Projects that promote the education of bikeways, walkways, and blueways.

C. Teacher Student Tally Results

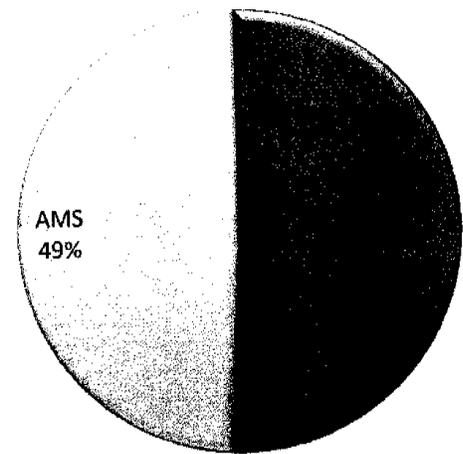
Approximately 50% of the 880 students on the AES and AMS school campus participated in the Teacher Student Tally Survey. Additional results are provided below:

Participation vs. Enrollement

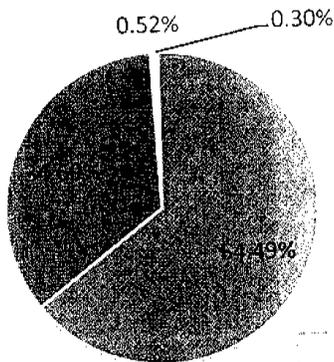


	AES	AMS
Student Participation	225	218
Total Number of Students	340	540

Percentage of Students who Contributed to the Survey

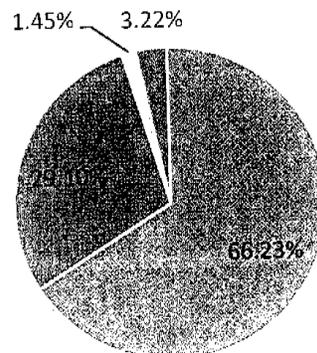


AES Arrival/Departure Mode of Transportation



- School Bus
- Family Vehicle
- Carpool
- Walk

AMS Arrival/Departure Mode of Transportation



- School Bus
- Family Vehicle
- Carpool
- Walk

D. Parent Survey Results

Nearly 880 surveys were sent home with students in March. XX surveys were returned within the 4-day timeline (about XX%). The Parent Survey template provided by the federal SRTS online training program was utilized (shown below).

Parent Survey About Walking and Biking to School

Dear Parent or Caregiver,
 Your child's school wants to learn your thoughts about children walking and biking to school. This survey will take about 5 - 10 minutes to complete. We ask that each family complete only one survey per school year for their children attend. If more than one child from a school brings a survey home, please fill out the survey for the child with the next birthday from today's date.
 After you have completed the survey, send it back to the school with your child or give it to the teacher. Your responses will be kept confidential and neither your name nor your child's name will be associated with any results. Thank you for participating in this survey!

+ CAPITAL LETTERS ONLY - BLUE OR BLACK INK ONLY +

School Name: _____

1. What is the grade of the child who brought home this survey? Grade (PK, K, 1, 2, 3)

2. Is the child who brought home this survey male or female? Male Female

3. How many children do you have in Kindergarten through 8th grade?

4. What is the street intersection nearest your home? (Please write the names of two intersecting streets)
 _____ and _____

Place a clear 'X' inside box. If you make a mistake, fill the entire box, and then mark the correct box.

5. How far does your child live from school?
 Less than 1/2 mile 1/2 mile up to 1 mile More than 1 mile
 1/4 mile up to 1/2 mile 1/2 mile up to 3 miles Don't know

Place a clear 'X' inside box. If you make a mistake, fill the entire box, and then mark the correct box.

6. On most days, how does your child arrive and leave for school? (Select one choice per column, mark box with 'X')

Arrive at school	Leave from school
<input type="checkbox"/> Walk	<input type="checkbox"/> Walk
<input type="checkbox"/> Bike	<input type="checkbox"/> Bike
<input type="checkbox"/> School Bus	<input type="checkbox"/> School Bus
<input type="checkbox"/> Family vehicle (only children in your family)	<input type="checkbox"/> Family or schooler's vehicle (your family)
<input type="checkbox"/> Carpool (Child or from other families)	<input type="checkbox"/> Carpool (Teacher from other families)
<input type="checkbox"/> Transit (city bus, subway, etc.)	<input type="checkbox"/> Transit (city bus, subway, etc.)
<input type="checkbox"/> Other (shareboard, rickshaw, inflexi-cycles, etc.)	<input type="checkbox"/> Other (shareboard, rickshaw, inflexi-cycles, etc.)

Place a clear 'X' inside box. If you make a mistake, fill the entire box, and then mark the correct box.

7. How long does it normally take your child to get to/from school? (Select one choice per column, mark box with 'X')

Travel time to school	Travel time from school
<input type="checkbox"/> Less than 5 minutes	<input type="checkbox"/> Less than 5 minutes
<input type="checkbox"/> 5 - 10 minutes	<input type="checkbox"/> 5 - 10 minutes
<input type="checkbox"/> 11 - 20 minutes	<input type="checkbox"/> 11 - 20 minutes
<input type="checkbox"/> More than 20 minutes	<input type="checkbox"/> More than 20 minutes
<input type="checkbox"/> Don't know / Not sure	<input type="checkbox"/> Don't know / Not sure

8. Has your child asked you for permission to walk or bike to/from school in the last year? Yes No

9. At what grade would you allow your child to walk or bike to/from school without an adult?
 (Select a grade between PK, K, 1, 2, 3) grade (or) I would not feel comfortable at any grade

Place a clear 'X' inside box. If you make a mistake, fill the entire box, and then mark the correct box.

10. What of the following issues affected your decision to allow, or not allow, your child to walk or bike to/from school? (Select All that apply)

<input type="checkbox"/> Distance	<input type="checkbox"/> My child already walks or bikes to/from school
<input type="checkbox"/> Corner lots or driving	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Sure
<input type="checkbox"/> Time	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Sure
<input type="checkbox"/> Child's before or after school activities	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Sure
<input type="checkbox"/> Speed of traffic along route	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Sure
<input type="checkbox"/> Amount of traffic on route	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Sure
<input type="checkbox"/> Ability to walk or bike safely	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Sure
<input type="checkbox"/> Sidewalk or pathways	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Sure
<input type="checkbox"/> Safety of intersections and crossings	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Sure
<input type="checkbox"/> Crossing guards	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Sure
<input type="checkbox"/> Violence or crime	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Sure
<input type="checkbox"/> Weather or climate	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Sure

Place a clear 'X' inside box. If you make a mistake, fill the entire box, and then mark the correct box.

11. Would you probably let your child walk or bike to/from school if this problem were changed or improved? (Select one choice per line, mark box with 'X')

<input type="checkbox"/> Strongly Encouraged	<input type="checkbox"/> Encourage	<input type="checkbox"/> Neither	<input type="checkbox"/> Discourage	<input type="checkbox"/> Strongly Discourage
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12. In your opinion, how much does your child's school encourage or discourage walking and biking to/from school?
 Strongly Encouraged Encourage Neither Discourage Strongly Discourage

13. How much fun is walking or biking to/from school for your child?
 Very Fun Fun Neutral Boring Not Fun

14. How healthy is walking or biking to/from school for your child?
 Very Healthy Healthy Neutral Unhealthy Very Unhealthy

Place a clear 'X' inside box. If you make a mistake, fill the entire box, and then mark the correct box.

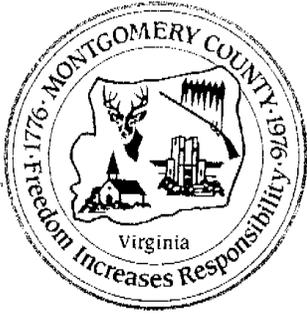
15. What is the highest grade or year of school you completed?

<input type="checkbox"/> Grades 1 through 8 (Elementary)	<input type="checkbox"/> College 1 to 2 years (Some college or technical school)
<input type="checkbox"/> Grades 9 through 11 (Some high school)	<input type="checkbox"/> College 3 years or more (College graduate)
<input type="checkbox"/> Grade 12 or GED (High school graduate)	<input type="checkbox"/> Prefer not to answer

16. Please provide any additional comments below.

In general, over XX% of the survey respondents lived over 2-miles away from campus. In addition to distance, the speed of traffic and amount of traffic on Route 8 were the primary concerns. Roughly XX% of the survey respondents lived less than 10 minutes away from the school. Additional survey feedback is provided on the next page.

E. School Wellness Policy



MONTGOMERY COUNTY DEPARTMENT
OF PLANNING & GIS SERVICES

PLANNING
GIS & MAPPING

755 ROANOKE STREET, SUITE 2A, CHRISTIANSBURG, VIRGINIA 24073-3177

MEMORANDUM

TO: Planning Commission

FROM: Planning Staff *JEM*

DATE: March 14, 2012

RE: **Safe Routes to Schools-Belview Elementary**

Montgomery County is partnering with Belview Elementary and the New River Valley Planning District Commission to develop a Safe Routes to School (SRTS) Program. The first step for developing a Safe Routes to School Program is for a school or community to develop a School Travel Plan. A Travel Plan puts in writing a school community's intentions for making travel to and from school, by bike or walking, an option. Furthermore, the plan is often the first step in a successful Safe Routes to School Program. After the travel plan has been drafted, Montgomery County and/or Montgomery County Public Schools may pursue grant funding to provide infrastructure near the school to make walking and biking to school a safer option.

In late January 2012, a taskforce was formed to work on the travel plan for Belview Elementary. The taskforce included Montgomery County School Board and Planning staff, as well as Planning District Commission (PDC) staff. The Belview Elementary Principal and teachers, representatives from the Montgomery County Sheriff's Department, and the Virginia Department of Transportation (VDOT) were also an integral part of the taskforce. The taskforce had a series of four (4) meetings to discuss the components of the travel plan and provide Planning and PDC staff with the information needed to draft the travel plan.

The main goals identified by the taskforce were:

1. Improve existing drop off/pick up area
2. Install a safe crossing across Route 114
3. Provide pedestrian and cyclist friendly connections to nearby neighborhoods

Some of the highest priority barriers that the taskforce identified were:

1. A major roadway divides the school from residential areas – VA Primary Rt. 114
2. Crossing streets and intersections is difficult or dangerous
3. There are missing or insufficient walkways
4. School walkways/paths are not accessible to students with disabilities – challenging topography present
5. Drop-off and pick-up process creates congestion and unsafe behaviors

Surveys were also sent home to the parents and guardians of all 245 students to assess interest and determine how children currently arrive at school. 78 surveys were returned. Belview Elementary also

provided information regarding the transportation of their students. The information gleaned from the surveys is attached for review.

Planning and PDC staff also attended a Parent Teacher Association Meeting on March 8, 2012, and spoke with the parents and guardians present about the draft plan and provided an opportunity to answer any questions and gather feedback.

A draft of the SRTS infrastructure plan and Draft Travel Plan, prepared by PDC staff, has been included for your review. This plan attempts to identify the issues specific to Belview Elementary, as well as the strengths of the school, and look at possible options for safer walking and biking paths to and from the school. Staff would welcome any suggestions or feedback.

After the draft plan has been reviewed, PDC and Planning Staff will submit the plan to VDOT for review and approval. When Montgomery County has an approved travel plan, Montgomery County and/or Montgomery County Public Schools can move forward to apply for a grant to implement some or all of the proposed infrastructure improvements around Belview Elementary School. As part of our submittal to VDOT, staff is requesting that the Planning Commission endorse the travel plan prior to its submittal to VDOT for review.

Attachments: SRTS Belview Infrastructure Draft Plan
Parent Survey Results
Belview Elementary Draft Travel Plan

Belview Elementary is committed to ensuring that students can utilize physically active transportation for a safe and enjoyable trip to and around school!



- Creating Solutions**
- Improve existing pick-up/drop-off area
 - Install a safe crossing over Route 114
 - Connect close neighborhoods

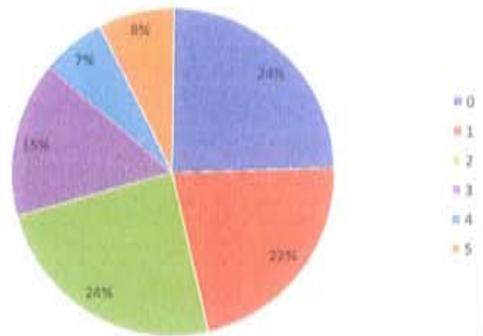
- Existing Barriers to Active Transportation**
- A major roadway divides the school from residential areas—VA Route 114
 - Crossing streets and intersections is difficult or dangerous.
 - Missing or insufficient walkways.
 - School walkways/paths are not accessible to students with disabilities—topography present
 - Drop-off and pick-up process creates congestion and unsafe behaviors.

Parent Survey Results

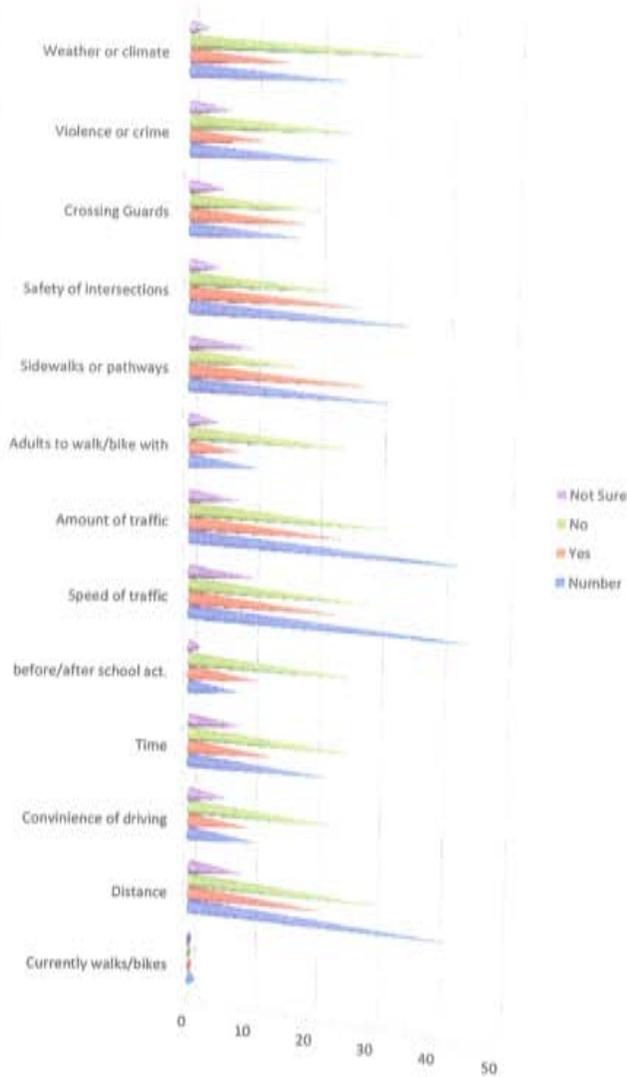
Response Demographics



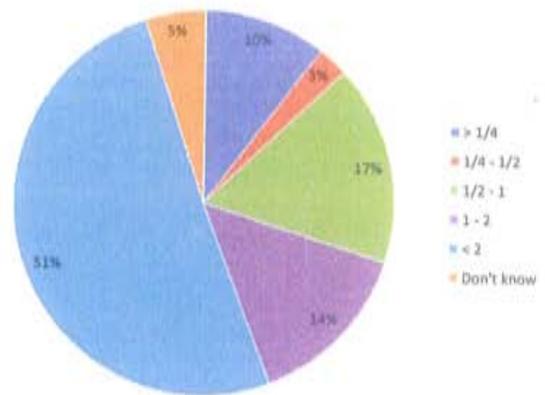
Grade of Student w/Survey



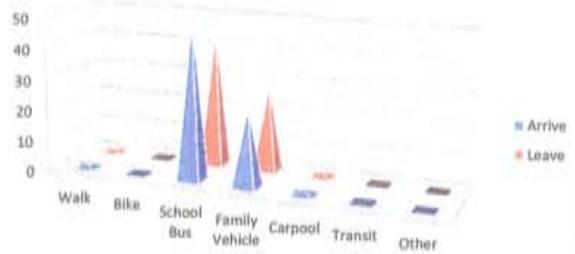
Issues - If changed or improved would you allow your child to walk/bike to school?



How far does your child live from school?



How does your child arrive and leave for school?



Safe Routes to School Travel Plan
Belview Elementary School

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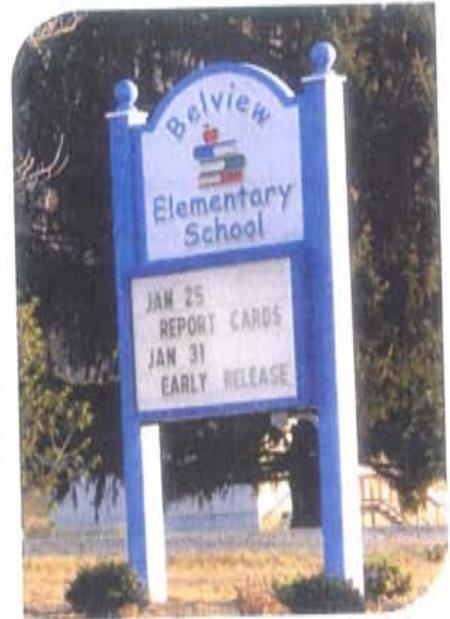


Section 1 – Introduction

Belview Elementary School is committed to ensuring that all our students can utilize *physically active transportation*, such as walking and bicycling, for a safe and enjoyable trip to school. This School Travel Plan aims to address the issues that impede active transportation and seeks to strategically solve these problems by implementing a Safe Routes to School program.

Our community is motivated to pursue Safe Routes to School because:

- We highly value student physical activity and health.
- We want to maintain the air quality and environment around our school.
- We wish to improve unsafe or insufficient walkways, bikeways, and crossings.
- We are committed to reducing speeding and reckless behaviors near the school.



Section 2 – Safe Routes to School Team

We believe that a diverse Safe Routes to School Team develops the most successful School Travel Plans. Our Team is comprised of a variety of stakeholders, each lending their own unique perspective and expertise in order to make walking and bicycling safe, accessible, and fun for our students. The members of our team include:

- Jamie MacLean, Development Planner, Montgomery County
- Rhonda Baker, Principal, Belview Elementary School
- Wendy Phillips, Reading Specialist, Belview Elementary School
- Robin Hylton, Nurse, Belview Elementary School
- Gretchen Ninestein, Belview Elementary School
- K. Preston, Belview Elementary School
- Laura Williams, Grant Writer/Research Proposals, Mont. Co. Public Schools
- Lt. James Bowyer, Supervisor & Crime Prevention Specialist, Sheriff's Office
- Chris Lucas, DARE Instructor, Sheriff's Office
- Steven Sandy, Planning Director, Montgomery County
- Elijah Sharp, Regional Transportation Planner, NRV Planning District Commission
- John Holst, Traffic Engineer, Whitman, Requardt & Associates
- David Clarke, VDOT, Christiansburg Residency Office
- Neal Turner, Emergency Services Coordinator, Montgomery County
- Melanie Smith, Healthy Kids Campaign Organizer, Virginia Faith Center

Section 3 – The Public Input Process

Our Team worked to include the entire community in developing our School Travel Plan. To accomplish this, we:

- Administered parent surveys
- Incorporated existing bike or pedestrian plan recommendations
- Incorporated our School Wellness Policy objectives
- Hosted a public meeting
- Solicited student opinions

Section 4 – Description of School

Our School Travel Plan addresses the needs of an individual school. The School's motto is Good better best, never let it rest, until the good is better and the better is BEST (Belview Elementary School Team).

Belview Elementary School
3187 Pepper's Ferry Road
Radford, Virginia 24141

Belview Elementary is located in Montgomery County along VA Primary Route 114, a local main thoroughfare that connects the Town of Christiansburg and the City of Radford. The school opened in 1954 and currently has 245 students. Over 50% of Belview's students qualify for the federal free and reduced price lunch program.

In February of 1971, a school bus was struck by a dump truck on Route 114. Two Belview students were killed and over 20 students were transported to local hospitals.

Current weekday traffic exceeds 11,000 cars per day on Route 114. A new residential subdivision is currently under construction north of the school campus, Forest Hills. The Forest Hills plan includes 70 townhouses that will generate additional traffic and enroll 40 new students at BES.

Students attending Belview come from a variety of educational and economic backgrounds. Their parents work at the nearby Radford Army Ammunition Plant, in privately owned factories and businesses, at Virginia Tech and Radford Universities, and some are self-employed. A large

number of Belview's students reside in large manufactured home parks located near the school. Many parents and grandparents of Belview's current students attended the school during their elementary years. Belview has an active parent group that leads: a classroom volunteer program, fund-raising efforts, and resources for families in need.



Section 5 – Current Travel Environment

A. How Students Regularly Travel to School

This is how all of our students (K-5) regularly travel to and from school:

Travel Mode	Walk	Bike	School Bus	Family Vehicle	Carpool	Public Transit	Other	Total
Number of Students	1	0	171	73	0	0	0	245

Source: 2011 – 2012 BES Enrollment Data

B. Distances Students Live From School

These are the distances all of our students live from their school:

Distance lived from school	Less than .5 mile	.5 mile to 1 mile	From 1 to 2 miles	More than 2 miles
Number of Students	31	46	22	146

Source: Montgomery County Public Schools, February 2012

C. Activities in Place During Student Travel Times

We have the following supports or activities in place during student travel times:

- Police department support (part time)
- School flashing beacons
- Staff presence during drop-off/pick-up
- Neighborhood Watch program (limited)

D. Current Activities to Enhance Safe and Active Student Travel

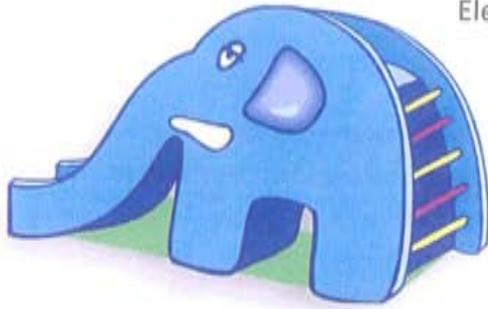
The Belview area currently lacks supporting facilities to encourage student travel. Currently, bus safety training is provided on an annual basis.

E. Current School Travel Policies

Belview doesn't have a policy depicting how students arrive/depart the school. The majority of students arrive by bus or car each morning, and must follow the procedures shown in section 5G. Students are allowed to walk or bike to school.

Belview does have a School Wellness Policy to promote and protect staff members and children's health, well-being, and ability to learn. The policy establishes goals for nutrition, physical activity, school related activities, nutrition guidelines, and mental well-being of staff and students.

Nutrition education is provided through the monthly newsletter, the school website, and morning announcements. A school garden has been established with plans to increase its size and the number of classes participating in working with it. The school nurse also teaches lessons in each grade level about nutrition.



Physical activity opportunities are provided daily at Belview Elementary. Currently a walking club utilizes existing paved lots in the school and seeks additional membership from students and staff. The after school Adventure club encourages physical activity.

School related activities to promote student wellness include a health/safety fair, bike rodeo, field day, and 4-H extension activities. In addition, school parties and related activities will have snacks that follow the Federal Nutrition Guidelines.

Nutrition Guidelines follow the Scorecard for the Governor's Nutrition and Physical Activity Award standards. The standards include: 100% fruit drinks, water and low-fat milk; and snacks with fewer than 300 calories, less than 30% of calories from fat, less than 10% of calories from saturated fat, and less than 35% by weight of sugar per serving. When available, vegetables from the school garden are offered.

Mental well-being of students is encouraged through opportunities such as: "drop in your bucket" morale booster, seminars at PTA/Faculty meetings to provide education about mental health, social committee recognition for special days throughout the year, pot-luck lunches for staff on early release days, catered meals near holiday breaks, secret pal program, announcements about students displaying good citizenship, and feedback forums several times a year to express concerns.

F. Existing bus Service

Our school does provide bus service to every student. Currently 70% of students utilize the existing bus service, 21% of students arrive in a family vehicle for personal reasons, and 9% of students arrive by a family vehicle for student activities that occur before or after normal school hours.

G. Arrival and Dismissal Procedures

Belview has school arrival and dismissal policies in place. In general, students may not enter the school before 8:30 am and are dismissed at 3:25 pm. Below is some specific information about the procedures:

The Belview Car Rider Arrival Procedure is as follows:

1. Students arriving by car are dropped off at the back of the building.
2. Students enter through the door and will go through the school directly to assigned morning clubs or breakfast.
3. If it is necessary for you to walk your child to the classroom, please understand that 8:30 – 9:00 is a critical time for teachers to set the tone for the day in their classroom. We respectfully request that you make an appointment with your child's teacher to conference and do not attempt to conference during this morning arrival time.



4. Bus lanes at the school are closed to cars. Students arriving after 9:00 am must be accompanied to main office by an adult.

The Belview Car Rider Dismissal Procedure is as follows:

1. 3:25 pm car dismissal
2. Do not enter the school during dismissal times. This helps maintain safety.
3. Come to the back of the school, creating a loop through the back parking lot, to pick up children.
4. Please remain in your car.
5. A staff member will call your child's name on the walkie-talkie to exit the building.
6. Students will be accompanied to each car for safe dismissal.

Section 6 – Barriers to Active Transportation

We have identified and prioritized the following barriers to walking and bicycling to school:

High Priority Barriers:

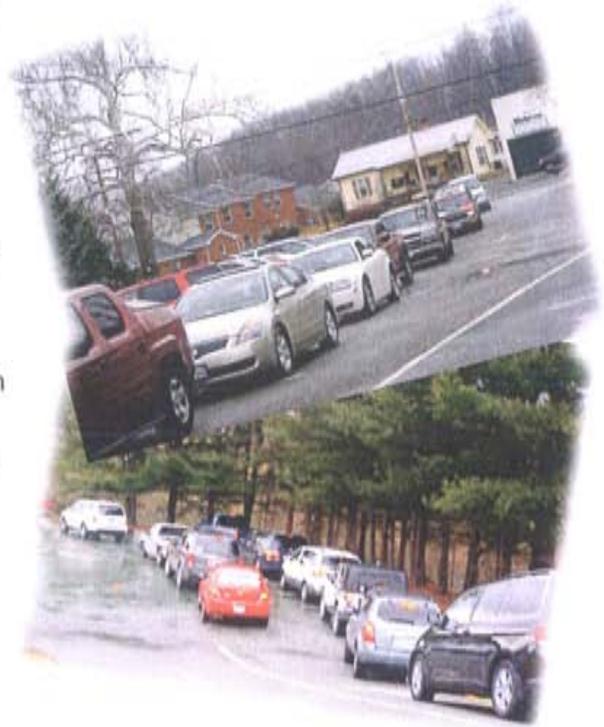
1. A major roadway divides the school from residential areas – VA Primary Rt. 114
2. Crossing streets and intersections is difficult or dangerous
3. Missing or insufficient walkways
4. School walkways/paths are not accessible to students with disabilities – topography present
5. Drop-off and pick-up process creates congestion and unsafe behaviors

Medium Priority Barriers:

1. Dangerous driving and speeding on streets
2. Significant traffic crashes within 2 miles of the school over last 3 years
3. No safe place to ride a bike to school

Low Priority Barriers:

1. Distance to school is too far
2. Bike parking at school is missing
3. Public safety concerns



Section 7 – Creating Solutions

Our primary goals for active transportation are: (1) increasing the number of students walking and bicycling to school, (2) improving the safety of walking and bicycling students.



We have identified strategies involving the 5 “E’s” of Safe Routes to School to address the identified barriers to walking and bicycling in our school community and to achieve our stated goals. We have selected at least one strategy from each of the categories of **Education, Encouragement, Enforcement and Evaluation**, in addition to any Engineering strategies that are indicated. The strategies are outlined in sections 7A – 7E below.

A. Education Strategies

Educational strategies for the Belview School include:

- Teach pedestrian and bicycle safety skills to students and parents
- Organize a Bicycle Rodeo or training course to teach on-bike skills
- Create educational materials
- Teach personal safety skills to students and parents

B. Encouragement Strategies

Encouragement strategies for the Belview School include:

- Initiate a walking/biking mileage club or other contest

C. Enforcement Strategies

Enforcement strategies for the Belview School include:

- Create a crossing guard training program
- Create a parent or student patrol program
- Lower speed limits in School vicinity

D. Evaluation Strategies

Evaluation strategies for the Belview School include:

- Counting the number of students who walk and bicycle to and from school.

E. Engineering Strategies

Engineering strategies for the Belview School include:

- Construct, replace, improve or repair sidewalks
- Install traffic calming measures (curb extensions, raised crosswalks, etc.)
- Build off-street walking/bicycling paths

- Install, enhance or repair crosswalks
- Install new or improved signage (school zone, speed limits, crosswalk, etc.)
- Install new or improved pavement markings or legends
- Make existing walkways accessible to disabled students
- Install bicycle parking near school (bike racks)
- Install median refuges for street crossings
- Install traffic control devices (pedestrian signals, flashing beacons, etc.)
- Increase safety and access for students walking and biking to school by redesigning pick-up and drop-off areas



Map A
Belview Elementary School
1/2 and 2 Mile Radius

- Legend**
- Corporate Line
 - State Road
 - Interstate Highway
 - Paved Highway
 - Private Roads (Lines-0)
 - Railroad
 - Hydrology
 - Belview Elementary Property
 - 1/2 Mile Radius
 - Two Mile Radius
 - Elementary School Zones
- Belview Elementary School Zones



Montgomery County, Virginia
 2012/12/08

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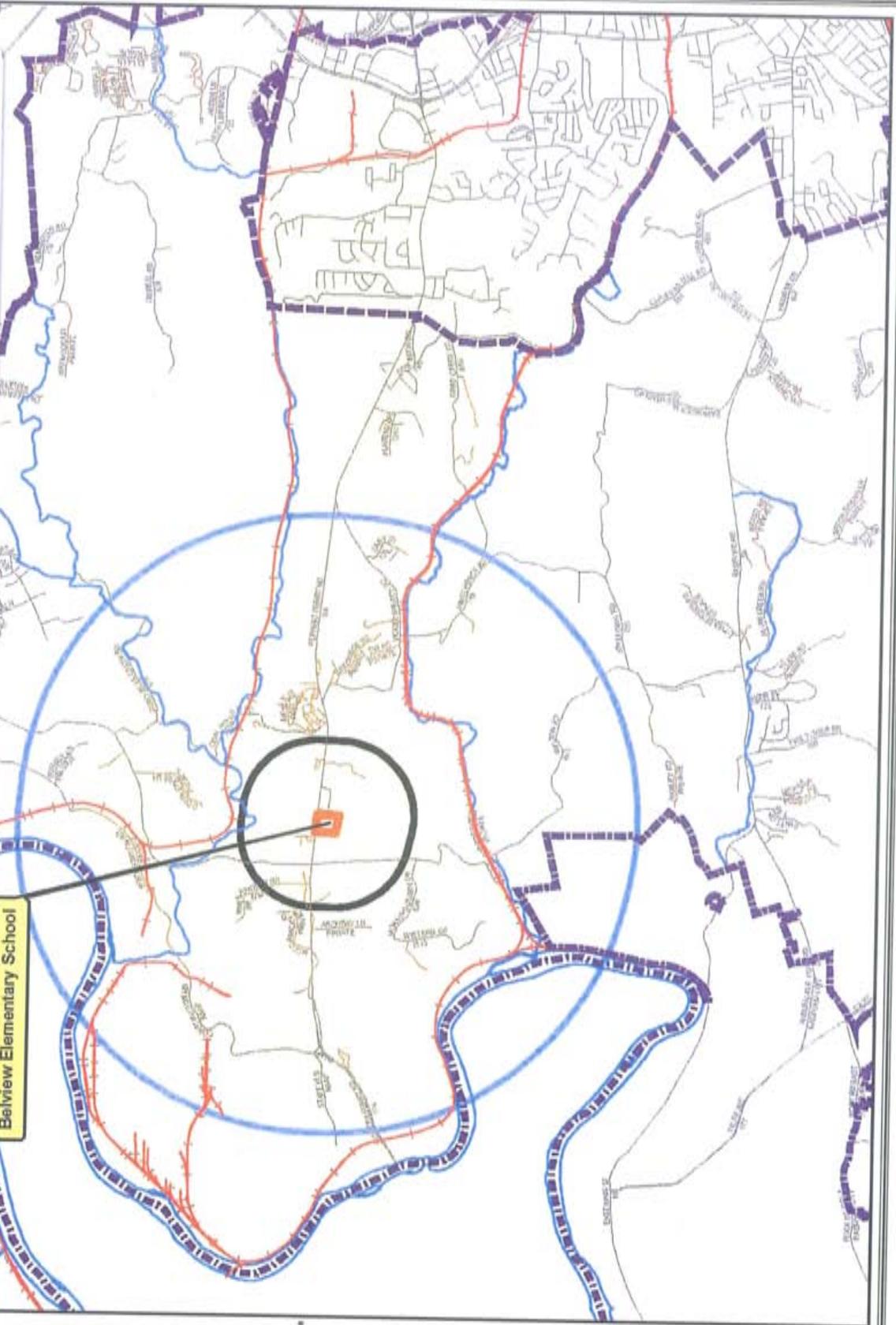
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Section 8 – Mapping
A. School Overview Map



Belview Elementary 2011 Aerial View



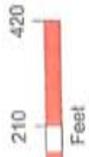
Legend

- Corporate Boundary
- Rural Communities
- State Roads
- Interstate
- Planned Highway
- Private
- Burg Roads
- Chorg Roads
- Railroads
- Unimproved Roads
- Paths Trails
- Major Rivers
- Streams
- Creeks
- Tax Parcels
- Motel/Va Addresses

Montgomery County, Virginia DISCLAIMER

THE INFORMATION CONTAINED HEREIN IS TO BE USED FOR REFERENCE PURPOSES ONLY AND IS NOT TO BE CONSIDERED AN OFFICIAL DETERMINATION OF OFFICIAL COUNTY, STATE, AND FEDERAL RECORDS. DATA IS BELIEVED TO BE ACCURATE, BUT IS NOT GUARANTEED.

SUBJECT LOCATIONS OR AREAS SHOULD BE VISITED TO VERIFY THE LOCATION AND PROPERTY RECORDS. CURRENT CHANGES TO RECORDS SHOULD BE CHECKED WITH THE LOCAL OFFICIAL ENGINEER OR ARCHITECT. CONTRACTORS SHOULD VERIFY LOCAL REGULATIONS TO AVOID THE RISK OF LIABILITY. THE INFORMATION SHOULD BE USED FOR REFERENCE PURPOSES ONLY AND IS NOT TO BE CONSIDERED AN OFFICIAL DETERMINATION OF OFFICIAL COUNTY, STATE, AND FEDERAL RECORDS. DATA IS BELIEVED TO BE ACCURATE, BUT IS NOT GUARANTEED.



B. Pedestrian and Bicycle Infrastructure Map

C. Infrastructure Map

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Section 9 – The Action Plan

The Safe Routes to School Team is committed to realizing our vision for a safe, enjoyable and accessible walking and bicycling environment for our students. We will utilize the following Action Plan to keep our efforts focused and on track:

Belview Elementary Safe Routes to School - Action Plan								
Strategies	Strategy Name	Strategy Detail	Time-frame	Responsible Party	Status	% of Students Affected	Estimated Cost	Funding Source
Educational	Teach Pedestrian and bicycle safety skills to students and parents. Potentially built into "Back to School Night" or during a general assembly.	Local Sheriff's department staff and/or bicycle organization safety training staff will be invited to a school-wide assembly.	Annual	BES, MCSO, Local Organizations	Not yet begun	70% - 100%	\$100	BES, PTA, SRTS, MCSO
	Organize a Bicycle Rodeo or training course to teach on-bike skills. Potentially built into the health fair which currently promotes safe walking.	Event to be held at BES and local Sheriff's department and/or bicycle organization volunteers will inspect bikes for safety, and set up obstacle courses to improve skills.	Annual	BES, MCSO, Local Organizations, Local Business	Active	25% - 30%	\$2,000	SRTS, Local Organizations,
	Create educational materials	BES will work with VDOT to include materials in the monthly newsletter; currently distributed throughout the school year.	Monthly	BES, VDOT	Underway	100%	\$500	SRTS, BES, PTA, Local Business
	Teach personal safety skills to students and parents	BES will work with local Police Department staff to organize personal safety skills training events on campus.	Less than 6 months	BES, MCSO, Local Organizations	Ongoing	100%	\$500	SRTS, BES, MCSO, Local Organizations
	Teach health and nutrition education to children.	Create materials for the monthly newsletter, provide classroom presentations, incorporate into existing physical education and guidance counselor programs.	Monthly	BES	Active	100%	\$500	BES, SRTS
Encouragement	initiate a walking/biking mileage club or other contest	BES would like to start a club or contest to increase and maintain participation in walking and bicycling to/at school. BES would work with VDOT to develop incentives and rewards for the program.	Year round, twice weekly	BES, VDOT	Not yet begun	10% - 20%	\$1,000	SRTS, BES, Local Business
	Jump Rope for Heart and Walkathon event	National event led by the American Heart Association.	Annual	BES	Active	100%	\$0	BES

Belview Elementary Safe Routes to School - Action Plan (Continued)

Strategies	Strategy Name	Strategy Detail	Time-frame	Responsible Party	Status	% of Students Affected	Estimated Cost	Funding Source
Enforcement	Supply equipment for new adult crossing guards.	Purchase equipment such as: reflective white gloves and vests for crossing guards.	48 months	BES, MCSO	Not yet begun	16%	\$1,000	SRTS, MCSO
	Create a parent or student patrol program	BES will initiate a student safety patrol program. 5th graders will be trained by local Sheriff's department officers to serve as safety patrols with equipment provided by SRTS funds.	24 months	BES, MCPS, MCSO	Not yet begun	100%	\$1,000	SRTS, BES, PTA
	Lower speed limits in School vicinity	Montgomery County will continue ongoing correspondence with VDOT to lower the speed limit within School Zone and Village Area	12 months	VDOT, Mont. County	Negotiation Underway	100%	\$0	VDOT
	Increase local traffic patrol	Montgomery County Sheriff's office will work with BES to increase traffic patrol during school hours.	12 months	BES, MCSO	Not yet begun	100%	\$0	MCSO
Evaluation	Counting the number of students who walk and bicycle to and from school.	BES will continue to maintain records on student arrival and departure.	Ongoing	BES	Active	100%	\$0	BES
Engineering	Construct a formal drop-off/pick-up area.	Construct a covered walkway, ADA accessible ramp into the school's southwest entrance, and a multipurpose path connecting entrances on the east and north-east side of the school.	48 months	Montgomery County	Not yet begun	30% - 50%	\$200,000	SRTS/Mont. County
	Construct a pedestrian crossing over Route 114	Construct ADA accessible concrete multipurpose trail, construct a pedestrian refuge area, install pedestrian activated traffic control devices, construct a left turn-turn lane to the school, install reflective pavement, install new or improved signage/pavement markings.	48 months	Montgomery County	Not yet begun	15% - 30%	\$300,000	SRTS/Mont. County
	Construct a residential connector trail	Construct a ADA accessible multipurpose trail connecting neighborhoods located to the east and west of the school campus. Install a small foot bridge, and construct a new fence along trail easement.	60 months	Montgomery County	Not yet begun	10% - 20%	\$150,000	SRTS/Mont. County

Section 10 – Plan Approval

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Section 11 – Supporting Documents

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MONTGOMERY COUNTY DEPARTMENT
OF PLANNING & GIS SERVICES

PLANNING
GIS & MAPPING

755 ROANOKE STREET, SUITE 2A, CHRISTIANSBURG, VIRGINIA 24073-3177

MEMORANDUM

TO: Montgomery County Planning Commission
FROM: Dari Jenkins, Zoning Administrator
DATE: March 14, 2012
SUBJ: ZONING ORDINANCE AMENDMENTS

We have been requested to review the following items for possible zoning ordinance amendments:

1. Consider revision of Section 10-44 (Off-street Parking and Loading) to allow pervious surfaces in particular circumstances when the moving of heavy equipment, tracked equipment and the storage of said equipment may make providing a "durable, dustless surface" impractical.

Section 10-44(e) *Surfacing*, is provided below for review.

Surfacing. Any public off-street parking area shall be surfaced so as to provide a durable and dustless surface, shall be graded so as to dispose of all surface water accumulation within the area, unless such surface water accumulation is part of a designed stormwater runoff control measure, and shall be arranged and marked to provide safe and orderly loading, unloading, movement, parking and storage of vehicles. At a minimum, surface treatment shall be equal to a prime and double seal.

Staff has collected some very preliminary data for review (**enclosed**) and is continuing to search for ideas for dealing with the issue of heavy equipment traffic without causing dust problems for neighboring sites. As we consider a possible amendment to this section, staff would also like to provide an opportunity for some pervious paving when conditions are appropriate.

2. Consider revision of Section 10-61, Definitions, to limit the number of animals allowed without obtaining approval for a commercial kennel approval.

Kennel, commercial: An establishment for keeping, training, breeding, handling, selling, treating or boarding dogs, cats, or other household pets as a business. Does not include establishments in which the sole function is grooming.

There are no other kennel definitions in the zoning ordinance. Currently, "commercial kennels" are allowed only with a Special Use Permit (SUP) in the Agricultural (A-1), General Business (GB), Community Business (CB) and Manufacturing (M-1) district.

Section 3-1, Animals, of County Code provides the following definition for a kennel:

Kennel means any establishment in which five (5) or more canines, felines, or hybrids of either are kept for the purpose of breeding, hunting, training, renting, buying, boarding, selling, or showing.

Staff would like to propose some type of amendment which defines the number of animals that constitutes a kennel. Please review the **(enclosed)** kennel data for an idea of what other counties are requiring for kennels.

3. Investigate requirements for "penned animals" that provide some limitations for situations where someone would confine 3 – 4 hogs, dogs or other animals within close proximity of a neighbor's residence or property line. Staff has been unable to obtain information regarding this situation at this point, but will continue to research the matter.

If anyone has information you would like to share regarding any of these topics, please contact me prior to our meeting on March 21, 2012.

Enclosure(s)

Roanoke County:

Sect. 30-82-9

H)

1. Private streets shall be allowed within a manufactured home park provided the surfacing materials and design comply with all applicable county standards for such streets, or to VDOT secondary road standards, whichever are more restrictive.

5. Manufactured home lots not served by a public or private street may be served by a walkway, trail or bikeway, provided such pathway serves the front, rear, or side of the manufactured home lot. Each pathway shall be constructed of a hard-surface, or gravel material, and shall have a minimum width of three (3) feet.

Sect. 30-92-13.1

F)

3. Pavement surface: The minimum pavement surface shall be asphalt. Alternate materials such as concrete, structural pavers, or cobblestone may be substituted provided the proposed surface will support the expected loads. Calculations and/or manufacturers specifications shall be required at submittal. Gravel is not an acceptable surface course.

Albemarle County

Chapter 18, Zoning, Section 4, General Regulations

4.12.15 MINIMUM DESIGN REQUIREMENTS AND IMPROVEMENTS FOR PARKING AREAS

The following design requirements and minimum improvements shall be provided for all off-street parking areas consisting of four (4) or more parking spaces:

- a. Surface materials. All parking areas consisting of four (4) or more spaces shall be surfaced. The surface materials for parking areas and access aisles shall be subject to review and approval by the county engineer, based upon the intensity of usage and Virginia Department of Transportation pavement design guidelines and specifications. The county engineer may approve the use of alternative surfaces deemed equivalent in regard to strength, durability, sustainability and long term maintenance for the intensity of the use.
- b. Grading and drainage systems. Parking area grading and drainage systems shall be designed and constructed to minimize, to the greatest extent practical, the amount of surface runoff exiting or entering through entrances to public streets.

4.12.18 MINIMUM DESIGN REQUIREMENTS AND IMPROVEMENTS FOR LOADING AREAS

- b. Surface materials. All loading and unloading berths shall be surfaced with a bituminous or other dust free surface.

MOBILE HOME PARK STREET STANDARDS

- b. Pavement shall be prime and double seal bituminous surface treatment. Base shall be six inches of 21 or 21A aggregate base.

James City County

Chapter 24, Article II Special Regulations

Sec. 24-57. Parking lot design.

(e) Surface and drainage of parking areas. Parking areas, driveways and entrances shall be surfaced with gravel, stone, asphalt or concrete and shall be maintained in good repair. Adequate drainage shall be provided in all parking areas for the removal of storm water and a drainage plan shall be submitted with the site plan and approved by the environmental director.

The use of grass pavers may be permitted in low-traffic areas (i.e. overflow parking for churches, special events, etc.) upon approval from the planning director, where it can be demonstrated that the vegetation will survive the amount of expected traffic.

(f) Surface and drainage of parking areas. Bus parking areas shall be surfaced with gravel, stone, asphalt or concrete and shall be maintained in good repair. Adequate drainage shall be provided for the removal of storm water and a drainage plan shall be submitted with the site plan and approved by the environmental director.

PORTLAND CEMENT PERVIOUS CONCRETE**Samples of Florida's Cities/ Counties Codes & Ordinances**

<http://www.secement.org/PDFs/Pervious%20Concrete%20Codes%20-%20FL%2010-07.pdf>

City of Stuart - LAND DEVELOPMENT REGULATIONS**Sec. 6.01.02. Impervious surface coverage**

D. *Alternative paving materials.* If pervious concrete is proposed for a project, then 50 percent of the area covered with pervious concrete shall be considered as a pervious surface provided it is installed and maintained in accordance with section 6.03.07 of this Code. Other porous paving materials may be utilized with a credit for pervious coverage as determined by the city development director and as per section 6.03.07 of this Code.

Sec. 6.03.07. Design standards

3. Pervious parking surfaces are permitted when the following conditions are met:

c) Soils of the "Sand Ridges and Coastal Ridges" and the "Low Ridges and Knolls," as mapped in the Soil Conservation Service's Soil Survey of Martin County, Florida (dated April 1981) shall represent favorable free-draining soil areas for a pervious credit to be awarded for the use of pervious concrete. Sub-surface soil testing must demonstrate that the manufacturer's specifications will be met to allow for percolation and other storm water functions. A registered professional engineer shall also make inspections and tests as necessary to certify that construction of the pavement is consistent with the approved plans as well as industry and manufacturer's standards;

d) Pervious parking areas shall allow storm water to percolate into the ground as designed as part of an overall storm water management system and in accordance with the approved site plan at a rate sufficient to accommodate the five-year, 24-hour storm event;

City of Titusville – CODE OF ORDINANCES LAND DEVELOPMENT REGULATIONS**Sec. 35-61. Pervious pavement standards.**

- (a) When pervious concrete pavement is used in the development of the site, twenty-five (25) percent of the area covered by the pervious concrete pavement shall be regarded as impervious and shall be constructed per City of Titusville Specifications on file with the Water Resources Department.
- (b) If other types of pervious surfaces are proposed, they will be reviewed and, if acceptable, approved on a case by case basis by the Administrator. The credit for the pervious coverage shall be based upon actual field performance data provided by the manufacturer.
- (c) Repaving of pervious pavement is prohibited.
- (d) Annual inspections or more frequent inspections as determined by the administrator shall be conducted by the City of Titusville. If maintenance is required the owner shall submit to the City documentation of the following:
 - 1. Removal of visible surface sediment accumulations, and
 - 2. Test results of infiltration rate through the pervious concrete pavement and subgrade soils system, using methods per the Water Resources details and specifications.
- (e) Maintenance specifications and pollution control specifications are on file with the Water Resources Department and shall be utilized for purposes of maintenance of pervious pavement and regulations of pollution. The Administrator may establish such reasonable fees to cover the costs of said inspections and regulations and a copy of said fee schedule shall be on file with the Water Resources Department.

City of Winter Park – CODE OF ORDINANCES**Sec. 58-67. Low density residential (R-2) district.**

Use of impervious coverage: In achieving the 65 percent allowable impervious coverage, use of pervious paving materials may be utilized to enhance stormwater retention to the extent permitted by the city stormwater engineer. However, use of these materials shall not reduce the provision of landscaping on at least 25 percent of the property.

City of Atlantic Beach – CODE OF ORDINANCES

Impervious surface shall mean those surfaces that prevent the entry of water into the soil. Common impervious surfaces include, but are not limited to, rooftops, sidewalks, patio areas, driveways, parking lots, and other surfaces made of concrete, asphalt, brick, plastic, or any surfacing material with a base or lining of an impervious material. Wood decking elevated two or more inches above the ground shall not be considered impervious provided that the ground surface beneath the decking is not impervious. Pervious areas beneath roof or balcony overhangs that are subject to inundation by storm water and which allow the percolation of that storm water shall not be considered impervious areas. Swimming pools shall not be considered as impervious surfaces because of their ability to retain additional rain water; however, decking around a pool may be considered impervious depending upon materials used. Surfaces using pervious concrete or other similar open grid paving systems shall be calculated as fifty (50) percent impervious surface, provided that no barrier to natural percolation of water shall be installed beneath such material. Open grid pavers must be installed on a sand base, without liner, in order to be considered fifty (50) percent impervious. Solid surface pavers. (e.g., brick or brick appearing pavers as opposed to open grid pavers) do not qualify for any reduction in impervious area, regardless of type of base material used.

County of Brevard – CODE OF ORDINANCES**Sec. 62-3636. Secondary recharge areas.**

g. Additional requirements may be placed upon the developer with regard to porous concrete depending upon specific site and local area conditions. The natural resources management division shall consider properly installed and maintained porous concrete to be 55 percent pervious for the purposes of site plan review

County of Hernando – CODE OF ORDINANCES

2. *Additional development standards.* The following additional standards shall be required for all large retail projects:

G. *Parking areas.* Parking lots and access aisle-ways shall be designed utilizing the following standards:

(2) *Parking spaces.* The number of parking spaces shall be determined in accordance with the LDRs. Each parking space in excess of the minimum shall require an additional landscaped area of ten (10) square feet to be placed within the internal parking area, and/or right-of-way buffer. Pervious parking areas, including turf block or grass shall be used for at least five (5) percent but no more than twenty (20) percent of the total constructed parking spaces, subject to approval by the county administrator or his designee. If grass parking is proposed, the parking shall be designed and constructed with a structural support (i.e. go-grid, go-block, etc.). The area designated for pervious parking would have to be maintained shall be located at the perimeter of the parking lot, and if possible, remote from the building. The pervious parking area does not count as part of the landscaping requirements.

County of Pasco – LAND DEVELOPMENT CODE

617.4 Additional development standards. The following additional development standards shall be required for all large-scale, commercial-retail buildings and all buildings within large-scale, commercial-retail, development projects:

G. *Parking areas.* Parking lots and access aisle ways shall be designed utilizing the following standards:

2. *Parking spaces.* The number of parking spaces shall be determined in accordance with this Code. A minimum of ten percent of the parking area shall be pervious parking. Pervious parking areas shall be constructed of permeable pavement and turf pavement like "turf block," "turf stone," and SF-Rima or grass, or some other material as approved by the development review committee. If grass parking is proposed, the parking shall be designed and constructed with a structural support; i.e., go-grid, go-block, etc. The areas designated for pervious parking shall be maintained. The areas designated for pervious parking shall be located throughout the parking lot area in conjunction with best management practices for an integrated stormwater-management system. The pervious parking does not count as part of the requirements of the Landscape and Irrigation Ordinance. Any area required by the Landscaping and Irrigation Ordinance does not count to meet the requirements of this section.

King County, Washington**SURFACE WATER MANAGEMENT**

V. "Impervious surface" means a hard surface area that either prevents or retards the entry of water into the soil mantle as under natural conditions before development or that causes water to run off the surface in greater quantities or at an increased rate of flow from the flow present under natural conditions prior to development. Common impervious surfaces include, but are not limited to, roofs, walkways, patios, driveways, parking lots, storage areas, areas that are paved, graveled or made of packed or oiled earthen materials or other surfaces that similarly impede the natural infiltration of surface and storm water. An open uncovered flow control or water quality treatment facility is not an "impervious surface".

Tar & Chip Paving: Tar & chip paving (which is also referred to as chip sealing), is very similar to asphalt, as it is a combination of hot liquid asphalt cement, liquid A/C (or hot tar if you prefer) as a binder and gravel as the main structural component. Unlike asphalt, which is premixed at an asphalt plant, the components are delivered separately and mixed on the jobsite. Tar & chip is nothing new, its has been used for over 100 years, all over the world, with great success, to pave and resurface roads, parking lots,

residential driveways, etc. and is used by county and DOT road crews on road paving projects, in virtually every state in America.

http://gormanpaving.com/tar_chip_paving.php

http://en.wikipedia.org/wiki/Permeable_paving

National Asphalt Pavement Association: Porous Asphalt

Basic Q & A (what is porous asphalt?):

http://www.hotmix.org/index.php?option=com_content&task=view&id=359&Itemid=863

Cross Section: http://www.hotmix.org/images/stories/porous_asphalt_poster1.pdf

EcoGrid/EcoRaster - Asphalt Driveways (plastic grid system)

<http://www.terrafirmenterprises.com/application/driveways.html>

- Very easy and quick to install (Can be a one man job)
- The unique grid design holds the gravel in place and separates it from the sub-base. Thus the gravel doesn't move nor does it require constant "topping up" with more gravel.
- Working on the "snowshoe principle", our grid disperses the weight of the vehicle over a larger surface area. Thus preventing compaction and improving water drainage.
- Improved water drainage and no compaction means that ruts and potholes simply don't develop.
- Reduced maintenance costs and safety.
- EcoGrid/EcoRaster's wall thickness and the use of the patented locking tabs prevents raveling of the grid even in vehicle turning areas.
- Tough and durable, EcoGrid/EcoRaster is resistant to chemicals, corrosion and climate extremes.

San Mateo County, California

Recycle Works: http://www.recycleworks.org/greenbuilding/sus_imperviousurfaces.html

Impervious surfaces include driveways, patios, and walkways. The more impervious surfaces on a site, the more run-off there is. The consequence of run-off is an increased speed of water flow, which cannot be absorbed into the ground as readily, increases erosion, and dumps an excessive amount of pollutants into one spot.

The goal, then, is to utilize surfaces that are "broken apart" and allow water to flow into the ground. In addition, in areas that freeze, this allows for the frozen ground to swell and then sink with the thaw, which eliminates cracks that form in wet laid patios, concrete and asphalt surfaces. Reducing impervious surfaces will help to minimize water velocity and run-off. It will aid the reduction of pollutants and sediment deposits in waterways and reduce estuarial water temperatures.

Utilizing planting swales instead of berms.

Planting areas within a parking lot should be in the form of swales versus berms. Swales gather water, which can then absorb into the groundwater system, while water on a berm simply runs off onto the paving. The swales are then planted with native grasses and trees that tolerate wet feet. Be sure that the soil in these swales is not compacted in the manner of the surrounding parking areas.

Narrow road width.

Narrow the width of roads, driveways and sidewalks within the local zoning regulations. If additional parking space is needed add an impervious paver or gravel expansion adjacent to the driveway. Shared driveways and parking lots are another easy way to reduce the amount of impervious surface on a site.

Parking lots can be greener by replacing unused parking spaces with planting beds. In addition to reducing the amount of impervious surface, it will decrease maintenance costs and create a more human-scaled environment.

Replace solid driveways with porous alternatives.

Replace solid concrete and asphalt driveways, with pavers, cobblestones, brick and turf stone, all of which will slow down the flow of water and allow it to settle into the ground. Another alternative is using impervious paths for the car tires with green plant material in between. Solid concrete can also be broken-up with decorative and functional paver inlays.

Porous paving or pervious pavement.

According to Central Concrete pervious pavement is a cement-based concrete product that has a porous structure allowing rainwater to pass directly through the pavement and into the soil at the rate of 8 to 12 gallons per minute, per square foot. This is achieved without compromising the strength, durability, or integrity of the concrete structure itself.

Green Spaces.

Design green spaces between hard surfaces (patios, walkways, and parking lots) and building edges. Not only will this help the aforementioned drainage issues, it will help to create a more welcoming and visually appealing site. Be sure that all paved areas are graded towards the planted areas.

Parking pullouts.

Since parking pullouts do not have a high level of wear and tear, asphalt and concrete are often not necessary. Substitute these impervious surfaces with gravel instead of asphalt or concrete.

Use dry laid patios and walk ways instead of wet laid.

Wet laid patios are set in concrete, which does not allow for any stormwater to be absorbed in that area. In contrast, dry laid patios are set in stone dust, which slows the velocity of sheet flow and allows for some absorption of storm water in that area. An additional benefit for regions that receive freezing temperatures is that dry laid patios will not crack like wet laid surfaces.

Interrupt walkways.

Small planting beds and creeping groundcovers, such as thyme, can be incorporated into the edges of walkways and patios. These planted areas will help to slow storm water flow and create a more aesthetic space.

Recycled concrete.

Use concrete from demolished walkways and driveways to build retaining walls and patios.

Snohomish County, Washington - Pioneering Pervious Pavement at Stratford Place Task Force assists City of Sultan and Developer, Craig Morrison of CMI Inc.*

http://www.perviouscrete.com/en/articles/pioneering_pervious_pavement/

VDOT

http://www.virginiadot.org/vtrc/main/online_reports/pdf/05-cr5.pdf

An innovative BMP that has been in use for over 20 years is porous pavement. Porous pavement is a special type of pavement that allows rain and snowmelt to pass through it, thereby reducing the runoff from a site and surrounding areas. In addition, porous pavement filters some pollutants from the runoff if maintained.

Application

Porous pavement may substitute for conventional pavement on parking areas, areas with light traffic, and the shoulders of airport taxiways a runways, provided that the grades, subsoils, drainage characteristics, and groundwater conditions are suitable. Slopes should be flat or very gentle. Soils should have field-verified permeability rates of greater than 1.3 centimeters (0.5 inches) per hour, and there should be a 1.2 meter (4-foot) minimum clearance from the bottom of the system to bedrock or the water table. In many instances porous pavements can be used in place of conventional asphalt or concrete in an ultra-urban environment. They are generally not suited for areas with high traffic volumes or loads. Composite designs that use conventional asphalt or concrete in high-traffic areas adjacent to porous pavements along shoulders or in parking areas have, however, been designed. Generally, porous pavements are most often used in the construction of parking areas for office buildings, recreational facilities, and shopping centers. Other uses include emergency stopping areas, traffic islands, sidewalks, road shoulders, vehicle crossovers on divided highways, and low-traffic roads (FHWA, undated). Some porous pavements such as porous asphalt have also been tested for use in highway projects (Hossain and Scofield, 1991).

Effectiveness

Porous pavement pollutant removal mechanisms include absorption, straining, and microbiological decomposition in the soil. An estimate of porous pavement pollutant removal efficiency is provided by two long-term monitoring studies conducted in Rockville, MD, and Prince William, VA. These studies indicate removal efficiencies of between 82 and 95 percent for sediment, 65 percent for total phosphorus, and between 80 and 85 percent of total nitrogen. The Rockville, MD, site also indicated high removal rates for zinc, lead, and chemical oxygen.

Design

There are several different designs of permeable pavement. These are:

Porous Asphalt – A great advantage to porous asphalt is that the same mixing and application equipment is used as for impervious asphalt. Only the formula for the paving material changes. Small stones are left out of the aggregate, and the amount of tar is reduced. The resulting surface has the same "blacktop" appearance, but contains spaces through which water can pass.

Porous Concrete – The same equipment may be used as for standard concrete. Larger pea gravel and a lower water-to-cement ratio is used to achieve a pebbled, open surface that is roller compacted. Expansion joints are cut using a roller with a welded steel flange.

Plastic Grid Systems – High strength plastic grids (often made from recycled materials) are placed in roadway areas. Some are designed to be filled with gravel on top of an engineered aggregate material, while others are filled with a sand/soil mixture on top of an aggregate/topsoil mix that allow grass to be planted on the surface. The grids provide a support structure for heavy vehicles, and prevent erosion. After heavy rains, the grids act as mini holding-ponds, and allow water to gradually absorb into the soil below. This paving material is often selected for gardens or recreational areas that must support vehicular or pedestrian traffic, but where a more natural appearance is desired. A porous grid system was installed more than ten years ago on East Executive Avenue at the White House in Washington DC to allow both green space and parking in this area.

Block Pavers – This material can be used to create a porous surface with the aesthetic appeal of brick, stone, or other interlocking paving materials. Traditional looking pavers can be specially designed with channels to funnel water between each block, into a substrate of sand and gravel for gradual soil filtration.

Duluth, MN

<http://www.lakesuperiorstreams.org/stormwater/toolkit/pervPaveCase.html>

Diamond-Vogel Paving Pattern

Hillsdale County, MI

<http://www.hillsdalecounty.info/planningeduc0004.asp>

Why Infiltration is a Good Thing

The way water moves through soil is called infiltration. Infiltration is the way underground water sources are replenished. Infiltration also helps maintain water quality because many soils and plants filter out certain pollutants as water moves through them. An impervious surface is one that does not allow water to infiltrate to the soil layer.

Infiltration maintains the natural hydrology and biology of the watershed, especially the headwaters.

When infiltration is not allowed to occur, a small stream may carry little or no water when it is not raining because there is so little stored groundwater to provide continuous flow. This means that everyone that counted on this stream for life, recreation, habitat, food, or water must find a new source.

Infiltration recharges water-bearing aquifers. It may take decades and sometimes centuries for rain or snow melt to reach the deep layers of the earth from which many private and municipal wells draw water for human consumption. However, that water does come from the surface. Diversion of surface waters eventually affects the quantity of groundwaters.

Infiltration improves the quality of the water passing through.

Earth, with its wetlands and soils, is the original and still the largest water filtration system around.

Infiltration protects recreational interests. As impervious areas increase, streams become "flashy", which tends to erode stream banks, water levels drop significantly in the summer, water temperature increases thereby reducing the variety of fish. Waters will also likely have higher levels of pathogenic organisms and toxic chemicals. None of this makes for good recreation and tourism.

It protects downstream areas from flooding. When headwater streams become "flashy" so do the next larger order of streams below them, and the rivers below those. This results in more severe flooding. Infiltration allows large quantities of water to be stored in the ground and released slowly - long after the storm passes.

The goal should be to emulate as much as possible the natural stream and groundwater hydrology of your area. This means retaining storm water runoff on site and provide for vegetative filtering before the runoff reenters the watershed, thereby limiting the pollutants it has picked up.

In general, the more porous the soil, and the more heavily planted the landscapes, the less water runs off and more infiltrates. The less porous the soil and the more hard surfaces exist on the landscape, the more water runs off.

Techniques:

Paved surfaces are easiest to reduce when new construction is planned. When installing a new driveway or sidewalk, consider a gravel bed, bricks and flagstones, bricks or interlocking pavers, crushed shells or stone and bark chips. These porous surfaces encourage some infiltration of runoff. Consider the design and layout of roads and pathways. Roads and pathways can also be designed with small berms, terraces or holding areas to trap storm water --especially on slopes. Designs with curves and designs which reduce standard roadway widths offer water quality benefits.

These design practices can be encouraged through regulations and ordinances as well as thoughtful Site Plan Reviews. Master Plans and Capital Improvement Programming should take into account these factors and cluster new developments in appropriate areas*.

Constructed wetlands are increasingly being used by communities for the treatment of storm water. A natural wetland may not have the appropriate hydrologic flow to enable it to effectively manage and treat increasing quantities of storm water from runoff. A jurisdictional wetland (one that requires a DEQ permit review for alteration - generally those adjacent to a surface water body of 5 acres or larger and located within a county with a population greater than 100,000) may require an expensive impact analysis to determine the harmful effects. There are several good examples of municipal constructed wetlands in the State of Michigan (Vermontville and Houghton Lake, for example).

Maplewood, MN

<http://www.ci.maplewood.mn.us/index.aspx?NID=455>

What is Pervious Pavement? City Project examples

PolyPavement

<http://www.polypavement.com/>

PolyPavement is a liquid soil solidifier. The grounds-maintenance crew or a landscape contractor installs it. The existing natural soil or decorative soils such as decomposed granite or suitable fine particle sand may be used. PolyPavement does not change the color of the soil. Natural Soil Pavement is more than two times stronger than asphalt. It is not damaged by rain. It supports heavy vehicles. And it requires little or no maintenance. Foot-traffic areas, parking lots, service roads, etc. may be specified to meet any and all design requirements.

PolyPavement passed all USACE performance criteria for rubber tire traffic and non traffic applications in all climates. No other material performed as well as PolyPavement and no other material had equivalent versatility, easy installation or as low a cost. Based strictly on the performance test results, USACE recommends PolyPavement for roads, helicopter landing pads, and other traffic and non-traffic surfaces in desert, tropic and temperate climates. No other method or material was recommended as highly.

Easy To Install PolyPavement may be installed by the maintenance crew utilizing readily available equipment. Simply dilute it with water and spray it onto compact soil; or mix it into loosened soil and compact it. A roto-tiller, a smooth drum compactor and a dilution tank with hose & nozzle are recommended. PolyPavement does not damage equipment. Easy-to-follow application instructions are provided. Unused portions of PolyPavement soil solidifier can be stored in the drums and used whenever needed for small or large areas.

Low Cost plus Many Benefits One inch of PolyPavement is more supportive than one inch of asphalt. Inch for inch, PolyPavement costs significantly less than asphalt. Spray-on applications of PolyPavement are effective for light traffic areas. Spray-on applications of PolyPavement are less than one-half inch thick, for outstanding cost effectiveness.

PolyPavement requires little or no maintenance. If damage occurs from spikes or other point forces, it is repaired easily by filling the holes with a pourable mixture of PolyPavement and the natural soil or patching by spreading and compacting a drier PolyPavement and soil mix into the damaged area.

PolyPavement **never** needs to be removed and replaced as with asphalt and concrete. Instead, after it wears, more PolyPavement can be applied on top of old PolyPavement inexpensively to extend the life of a Natural Soil Pavement application indefinitely.

Environmentally Safe: PolyPavement is non-toxic to plants and animals. It has been tested and proven safe for sensitive aquatic life. It does not leach into the ground water. PolyPavement may be applied in environmentally sensitive areas without worry or concern. PolyPavement is 100% acrylic polymers and it contains absolutely no carcinogenic acetate or chloride polymers.

Easy to Specify: PolyPavement may be specified on construction plans by using one of the construction plan specifications provided by PolyPavement. Simply call out the recommended PolyPavement Application Method, and specify the in-place or imported soil material that meets the architect's or the owner's esthetic requirements.

Kennel Definitions by County

County	Definition (Zoning Chapter)	Definition (Animal Chapter)	Zoning District(s) Allowed	By Right or SUP	Standards/Use Limitations
Albemarle	A place designed or prepared to house, board, breed, handle or otherwise keep or care for dogs and/or cats for sale or in return for compensation except as an accessory to a single-family dwelling.	Any establishment in which five (5) or more canines, felines, or hybrids of either are kept for the purposes of breeding, hunting, training, renting, buying, boarding, selling, or showing.	*Rural Areas (RA) *Highway Commercial (HC) *Heavy Industry (HI)	*Rural Areas (RA): SUP *Highway Commercial (HC): SUP (indoor only) *Heavy Industry (HI): By right (assoc. with vets)	Kennel, commercial: One (1) space per four hundred (400) square feet of gross floor area including runs, plus one (1) space per employee. - COMMERCIAL KENNEL, VETERINARY SERVICE, OFFICE OR HOSPITAL, ANIMAL HOSPITAL, ANIMAL SHELTER: Each commercial kennel, veterinary service, office or hospital, animal hospital and animal shelter shall be subject to the following: a. Except where animals are confined in soundproofed, air-conditioned buildings, no structure or area occupied by animals shall be closer than five hundred (500) feet to any agricultural or residential lot line. For non-soundproofed animal confinements, an external solid fence not less than six (6) feet in height shall be located within fifty (50) feet of the animal confinement and shall be composed of concrete block, brick, or other material approved by the zoning administrator b. For soundproofed confinements, no such structure shall be located closer than two hundred (200) feet to any agricultural or residential lot line. For soundproofed confinements, noise measured at the nearest agricultural or residential property line shall not exceed fifty-five (55)decibels c. In all cases, animals shall be confined in an enclosed building from 10:00 p.m. to 6:00 a.m. d. In areas where such uses may be in proximity to other uses involving intensive activity such as shopping centers or other urban density locations, special attention is required to protect the public health and welfare. To these ends the commission and board may require among other things: -Separate building entrance and exit to avoid animal conflicts --Area for outside exercise to be exclusive from access by the public by fencing or other means.
bedford	Kennel, commercial: The boarding, breeding, raising, grooming or training of two (2) or more dogs, cats, or other household pets of any age not owned by the owner or occupant of the premises, and/or for commercial gain. Kennel, private: The keeping, breeding, raising, showing or training of three (3) or more dogs over six (6) months of age for personal enjoyment of the owner or occupants of the property, and for which commercial gain is not the primary objective.	Any establishment in which five (5) or more canines, felines, or hybrids of either are kept for the purpose of breeding, hunting, training, renting, buying, boarding, selling or showing.	Kennel, Commercial: *Agricultural/Rural Preserve (AP) *Agricultural Residential (AR) *Village Center (AV) *Planned Residential Development (PRD) *Office (C-1) *General Commercial (C-2) *Planned Commercial Development (PCD) *Low-Intensity Industrial (I-1) *High-Intensity Industrial (I-2) *Planned Industrial Development (PID) Kennel, Private: *Agricultural/Rural Preserve (AP) *Agricultural Residential (AR) *Village Center (AV) *Low-density residential (R-1) *Medium-Density Residential (R-2) *Planned Residential Development (PRD) *Planned Commercial Development (PCD) *Planned Industrial Development (PID)	Kennel, Commercial: *Agricultural/Rural Preserve (AP) : By right *Agricultural Residential (AR) : SUP *Village Center (AV): SUP *Planned Residential Development (PRD): SUP *Office (C-1): By right *General Commercial (C-2): SUP *Planned Commercial Development (PCD): By right *Low-Intensity Industrial (I-1): By right *High-Intensity Industrial (I-2): By right *Planned Industrial Development (PID): By right Kennel, Private: *Agricultural/Rural Preserve (AP): Byright *Agricultural Residential (AR): By right *Village Center (AV): By right *Low-density residential (R-1): By right *Medium-Density Residential (R-2): By right *Planned Residential Development (PRD): By right *Planned Commercial Development (PCD): By right *Planned Industrial Development (PID): By right	Kennel, Commercial (A) General standards: 1. Each commercial kennel shall install and operate a kennel silencer. 2. Animal waste shall be disposed of in a manner acceptable to the department of health. 3. Crematoria or land burial of animals in association with a commercial kennel shall be prohibited. (B)Additional standards in the AP, AR, and AV districts: 1. The minimum area required for a commercial kennel shall be two (2) acres. 2. All facilities associated directly with the commercial kennel, whether indoors or outdoors, shall be set back a minimum of one hundred (100) feet from any property line. 3. When adjoining a residential use type, a Type C buffer yard in accordance with article V shall be provided along the property line which adjoins the residential use type. 4. The site shall front on and have direct access to a publicly owned and maintained street. (C) Additional standards in the C-2 district: All outdoor runs, training areas, and pens associated with a commercial kennel shall be set back a minimum of one hundred (100) feet from any property line. Kennel, Private (A) General standards: 1. Minimum lot size: One (1) acre. 2. A private kennel shall be permitted only when accessory to a single-family dwelling. 3. Exterior runs, pens and other confined areas designed to house four (4) or more animals shall be set back at least twenty-five (25) feet from any property line. For the purposes of this section, perimeter fencing of a yard shall not be considered a confined area.

Kennel Definitions by County

County	Definition (Zoning Chapter)	Definition (Animal Chapter)	Zoning District(s) Allowed	By Right or SUP	Standards/Use Limitations
Frederick	A place prepared to house, board, breed, handle or otherwise keep or care for dogs for sale or in return for compensation.	An enclosure wherein dogs are kept and from which they cannot escape.	*Rural Areas (RA)	*Rural Areas (RA): SUP	Where allowed separately or as a part of a veterinary clinic or hospital, kennels shall meet the following requirements: A. All dogs shall be confined to secure pens or structures. B. Where kennels are allowed, zoning district separation buffers and screens, Category C as described by this chapter, shall be provided in relation to surrounding properties containing residential uses.
Henrico	or <i>animal boarding place</i> . Any building and/or premises used, designed or arranged for the boarding, breeding or care of four or more dogs, cats, pets, fowl or domestic animals of at least four months of age.	Any establishment in which five or more canines, felines or hybrids of either are kept for the purpose of breeding, hunting, training, renting, buying, boarding, selling or showing.	*one family residence (noncommercial) *urban mixed use *agricultural (A-1) *business (B-1) *business (B-3)	*one family residence: SUP *urban mixed use: by right *agricultural (A-1): SUP *business (B-1): by right *Business (B-3): by right	*urban mixed use: All treatment rooms, cages, pens or kennels shall be within a completely enclosed, soundproof building, and such hospital or clinic shall be operated so as not to produce any objectionable noise, odors or vermin outside its walls. Site plans shall be reviewed and approved by the planning commission as provided by section 24-106 *agricultural (A-1): at least 400 feet from any lot in any residence district and 200 feet from any other lot occupied by a dwelling other than a farm dwelling or by any school, church or any institution for human care not located on the same lot with the said uses or buildings *Business (B-1): All treatment rooms, cages, pens or kennels shall be within a completely enclosed, soundproof building, and such hospital or clinic shall be operated in such a way so as not to produce any objectionable noise or odors or vermin outside its walls. *Business (B-3): Any open pens or enclosures for animals shall be located at least 200 feet from any R district.
James City	A place prepared to house, board, breed, handle or otherwise keep or care for either dogs or cats or both for sale or in return for compensation.	Any establishment in which five or more canines, felines, or hybrids of either are kept for the purpose of breeding, hunting, training, renting, buying, boarding, selling, or showing.	*General Agriculture (A-1) *Rural Residential (R-8) *General Business (B-1) *Limited Business/Industrial (M-1)	*General Agriculture (A-1): SUP *Rural Residential (R-8): SUP Business (B-1): SUP *Limited Business/Industrial (M-1): By right *General	None located
Pulaski	Any establishment in which five (5) or more canines, canin cross-breeds or canine hybrids are housed or kept. Such number shall not include pups born to a resident female and retained by the kennel owner for less than 8 weeks.	Any establishment in which five (5) or more canines, canin cross-breeds or canine hybrids are housed or kept. Such number shall not include pups born to a resident female and retained by the kennel owner for less than 8 weeks.	*Agriculture *Industrial		

Kennel Definitions by County

03/14/2012

County	Definition (Zoning Chapter)	Definition (Animal Chapter)	Zoning District(s) Allowed	By Right or SUP	Standards/Use Limitations
Roanoke	The boarding, breeding, raising, grooming or training of two (2) or more dogs, cats, or other household pets of any age not owned by the owner or occupant of the premises, and/or for commercial gain.	An enclosure or structure used to house, shelter, restrain, exercise, board, breed, handle or otherwise keep or care for more than three (3) dogs four (4) months of age or older, from which they cannot escape. The enclosure or structure shall not mean a dwelling or a fence used to demarcate a property line. For purposes of this Chapter and the license tax, the term "kennel" shall also include "multiple dog permit."	*Agriculture (AG-3) *Agriculture (AG-1) *Agriculture/Residential (AR) *Agriculture/Village Center (AV) *General Commercial (C-2)	*Agriculture (AG-3): by right *Agriculture (AG-1): SUP *Agriculture/Residential (AR): SUP *Agriculture/Village Center (AV): SUP *General Commercial (C-2): by right	Kennel, Commercial (A) General standards: 1. Each commercial kennel shall install and operate a kennel silencer. 2. Animal waste shall [be] disposed of in a manner acceptable to the department of health. 3. Crematoria or land burial of animals in association with a commercial kennel shall be prohibited. (B) Additional standards in the AG-3, AG-1, AR and AV districts: 1. The minimum area required for a commercial kennel shall be two (2) acres. 2. All facilities associated directly with the commercial kennel, whether indoors or outdoors, shall be set back a minimum of one hundred (100) feet from any property line. 3. When adjoining a residential use type, a Type C buffer yard in accordance with Section 30-92 shall be provided along the property line which adjoins the residential use type. 4. The site shall front on and have direct access to a publicly owned and maintained street. (C) Additional standards in the C-2 district: 1. All outdoor runs, training areas and pens associated with a commercial kennel shall be set back a minimum of one hundred (100) feet from any property line.
Rockingham	A place prepared to house, board, breed, handle or otherwise keep or care for domestic animals for sale or housed in return for compensation.	An enclosure wherein dogs are kept and from which they cannot escape.	*Prime Agriculture (A-1) *General Agriculture (A-2) *General Business (B-1) *General Industrial (M-1)	*Prime Agriculture (A-1): SUP *General Agriculture (A-2): SUP *General Business (B-1): By right *General Industrial (M-1): SUP	None located
Spotsylvania	any establishment in which five (5) or more canines, felines, or hybrids of either are kept for the purpose of breeding, training, renting, buying, boarding, selling or showing.	any establishment in which five (5) or more canines, felines or hybrids of either are kept for the purpose of breeding, hunting, training, renting, buying, boarding, selling or showing.	*Agricultural 1 (A-1) *Agricultural 2 (A-2) *Agricultural 3 (A-3) *Rural (Ru) *Planned Residential Rural (PRR)	*Agricultural 1 (A-1): SUP *Agricultural 2 (A-2): SUP *Agricultural 3 (A-3): SUP *Rural (Ru): SUP *Planned Residential Rural (PRR): SUP	None located