GIS Excellence Awards 2012



Fairfax County, Virginia

November 15, 2012

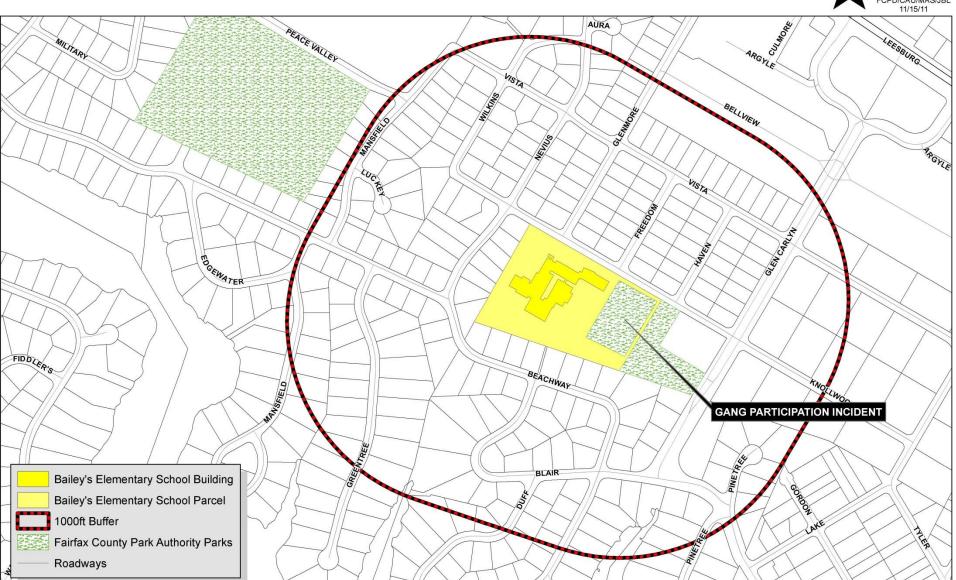
Welcome to the GIS Excellence Awards 2012

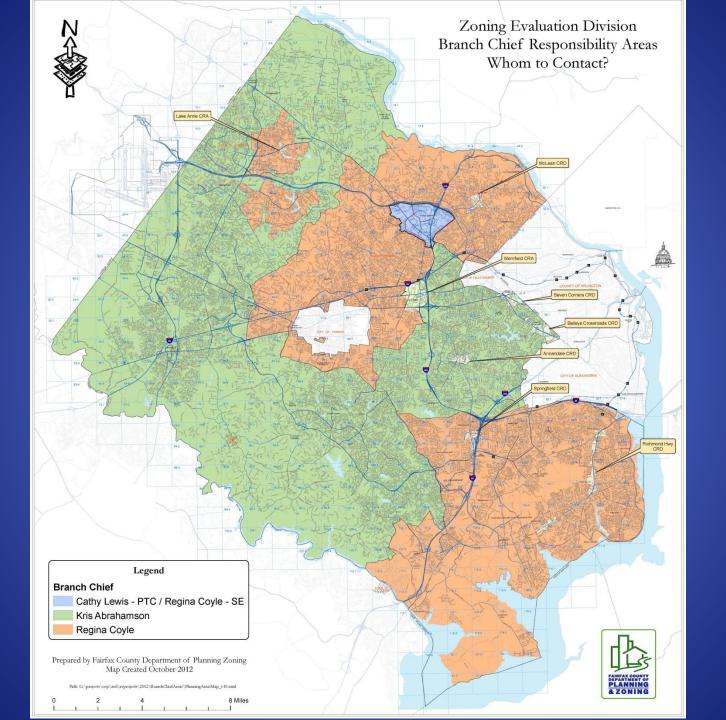
Mapping Excellence in Fairfax County

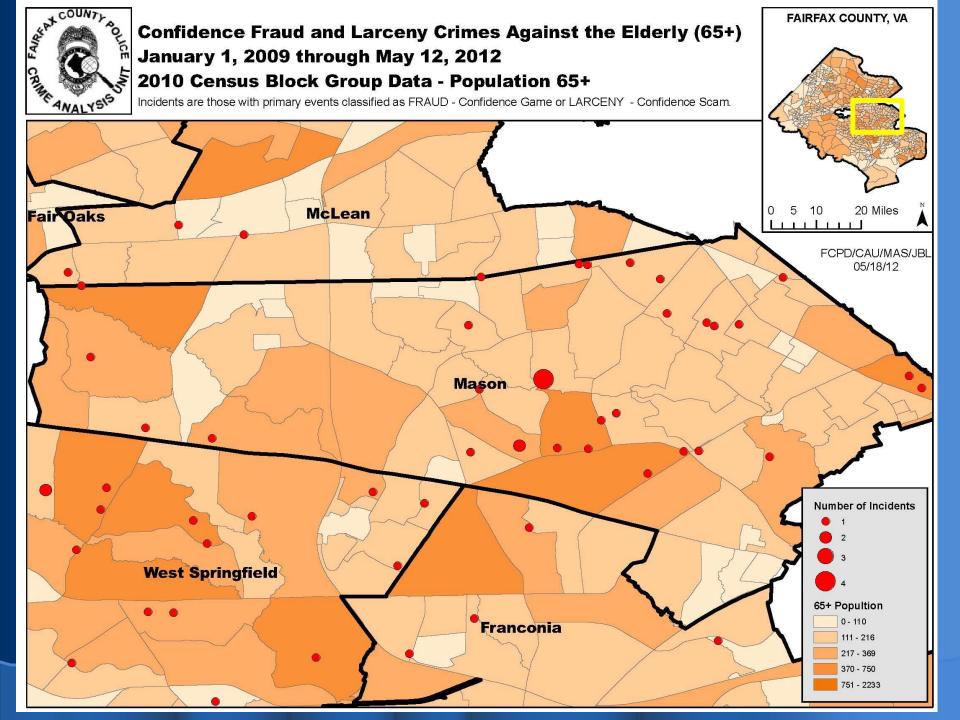
18.2-46.3:3 - Enhanced punishment for gang activity taking place in a gang-free zone

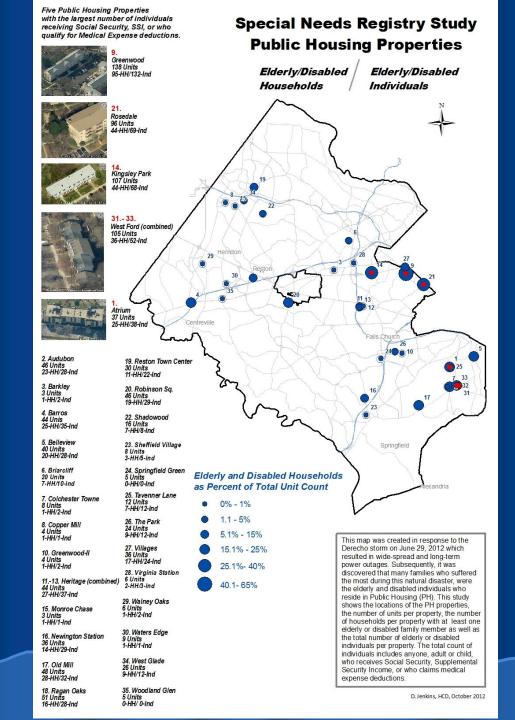
The map below depicts a 1000 foot buffer about the land parcel on which Bailey's Elementary School sits. Contained within this 1000 foot buffer is a park maintained by the Fairfax County Park Authority in Falls Church, Virginia (Fairfax County).











REGIONAL INCIDENT RESPONSE

THE NATIONAL CAPITAL REGION - INCIDENT MANAGEMENT TEAM'S (NCR-IMT) ASSISTANCE TO THE CITY OF ALEXANDRIA'S FIRE DEPARTMENT LINE OF DUTY DEATH (LODD) **FEBRUARY 9TH-17TH, 2012**



Event Planning

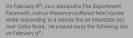








Paramedic Joshua Weissman Alexandria City Fire Department February 23, 1978 - February 9, 2012



The City of Alexandria, Virginia called upon the National Capital Region - Incident Management Team (NCR-IMT) to assist them in their response to (LODD). The NCR-IMT is comprised of personnel from various jurisdictions in the Metropolitan-Washington Health, Emergency Management, Law Enforcement, and other areas. The team has expertise in managing responses to major emergencies and large planned events. Over the course of nine days (February 9th -February 17th), 49 team members worked 2,886 hours alongside City of Alexandria staff and countless others assisting the City respond to Paramedic Joshua Weissman's tragic death.

A Line of Duty Death (LODD) of a public safety first responder is a tragedy for any jurisdiction, and the significant. For example, over 1,000 mourners attended the funeral service and lined the processional route. The main events involved with this LODD were the Transfer of Paramedic Weissman back to Virginia, the Visitation, the Temple Service, the Burial, and the Repass. In addition, to allow the personnel from the Alexandria Fire Department time to grieve, regional partners fully staffed the Alexandria fire stations for a 48 hour period. The City of Alexandria was able to call upon NCR-IMT to help with the planning, coordination,

GIS maps and analysis were critical in the support of all these LODD events. Over the course of nine days, GIS Specialists from the NCR-IMT worked alongside GIS staff from the City of Alexandria and produced over 44 separate maps and GIS-derived products. Serving on the NCR-IMT, Eric Fisher (Fairfax County Fire and Rescue Department) and Sarah Ierley (Montgomery of Alexandria GIS staff - Steven Chozick, Julie Kanzler, Jason Agatone, Brett King, and Michael Smith.

ranged from products to assist with planning for the multiple events, products to assist with the public transit services to and from the events, and products road closures.



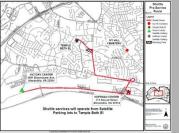




Transit Planning











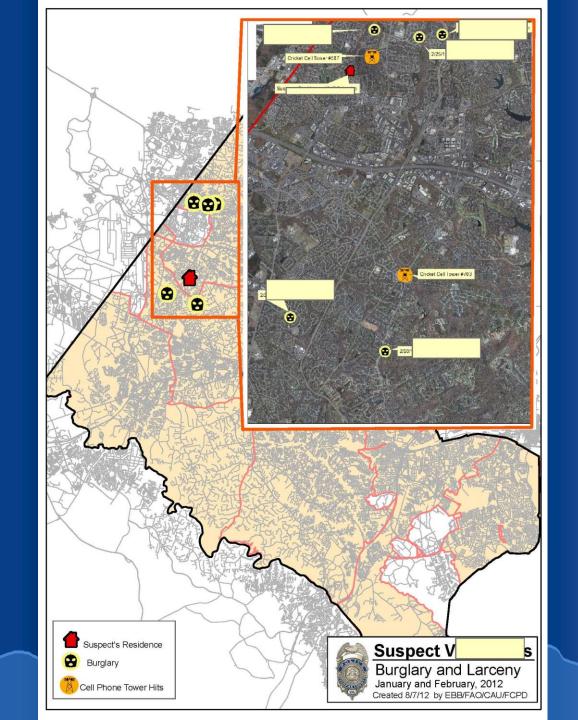
Public Notification



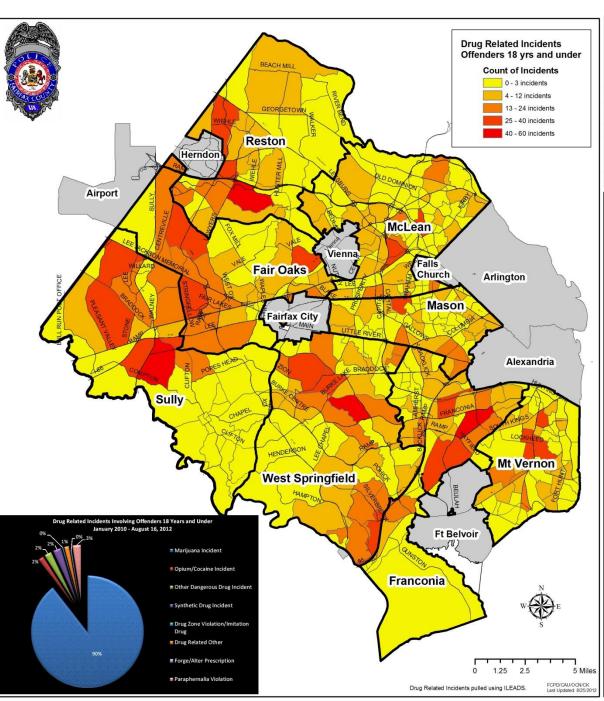








Jnder and ∞ Jan rreste Incidents ders/A ffen rug nvolving

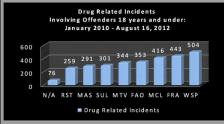


DRUG ACTIVITY INVOLVING OFFENDERS/ARRESTEES 18 YEARS AND UNDER

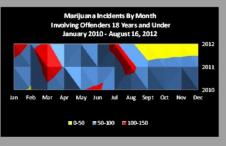
The following map displays drug incidents involving Fairfax County's young population (offenders and arrestees 18 years and under). Over the past 2.5 years there have been increases in drug incidents involving offenders 18 and under. In 2010 there were 987 incidents which increased (27%) to 1,253 incidents in 2011. There have been 847 incidents between January and August 16, 2012.

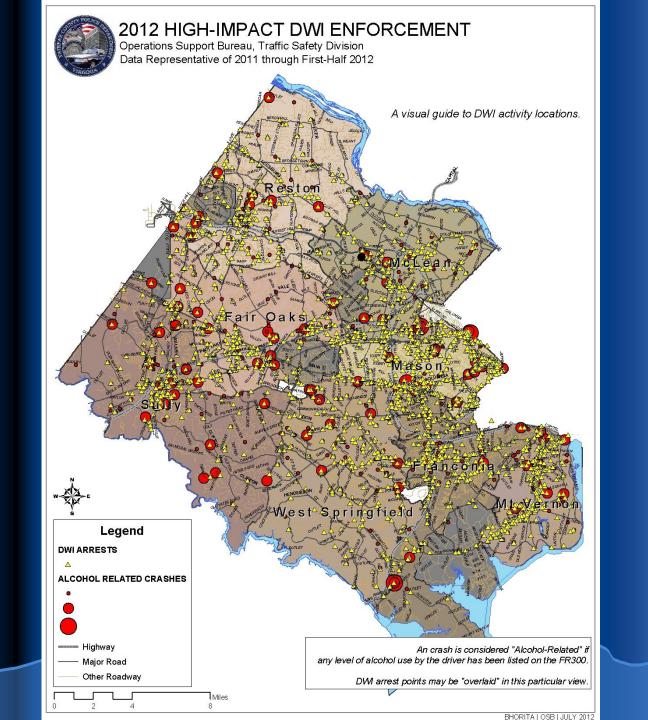
DRUG INCIDENT ANALYSIS

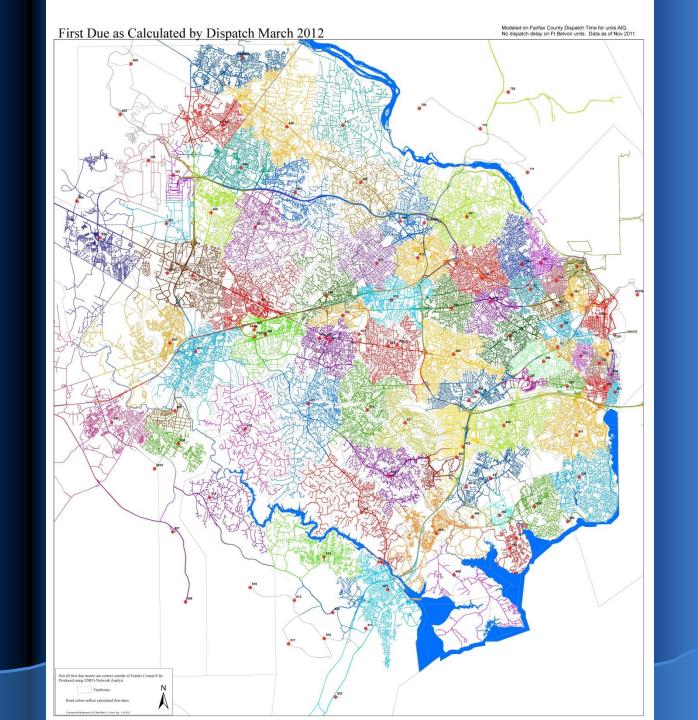
When looking at the breakdown of drug related incidents involving offenders 18 and under by station, West Springfield, Franconia and McLean station had the majority of the incidents. These three stations accounted for 46% of all of the drug related incidents with young offenders.



Incidents involving marijuana were the most common drug offenses. These offenses accounted for 90% of all of the offenses. When looking at the monthly breakdown since 2010, March and July had the most incidents.







Access to Community-Based Organizations that Provide Household Goods in Fairfax County

By Komail Khaja and Paul Maliszewski, Neighborhood and Community Services, Fairfax County Government





Abstract

'Accessibility' is defined as the degree to which a product or service is available to everyone. In transportation, access refers to the degree of ease of reaching destinations. In this project, we analyzed movements of household goods between community-based organization providers and people who requested these goods. We compare two scenarios: the actual scenario versus the optimal scenario. The actual scenario shows shortest path movements along the road network in Fairfax County between goods requesters and the providers Coordinated Services Planning referred them to. The second shows shortest path movements where goods requesters are assigned to their nearest providing facility, resulting in an optimal transport network. Our analysis illustrates which providing facilities had extreme distances (where requesters are referred to providing organizations whose facility is farther than its nearest providing facility). Our analysis also indicates which request referrals could potentially be improved in terms of organization assignment, and areas of potential improvement for future facility location. Our analysis concludes that although the optimal total transport network reduces the average travel distance between each facility and referred requests by 0.4 miles, the maximum travel distance between any requester and its referred organization facility decreases dramatically by 11.3 miles. In comparison between the actual network and the optimal network, several organizations' facilities including SHARE, FCCS, and LCAC showed a considerable reduction in travel distance.

Description

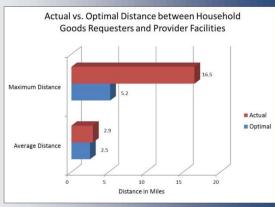
The goal of this project was to visualize the linkages of household goods requests and the organizations requesters were referred to, regardless of whether the need was met or ummet. This is to show the concentration of requesters in a particular service area and the distances between requesters and their referred organizations. This information illustrates to interested parties an analysis that would involve comparing their current network with other potential network scenarios in addition to coordinating with the system of community based organizations in the county to achieve their projected short, intermediate and long-term goals.

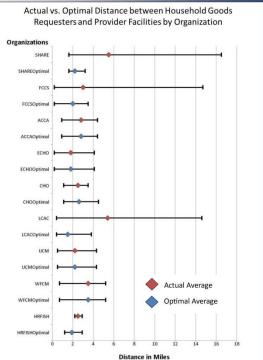
Data on household goods requests were obtained from Coordinated Services Planning for fiscal year 2012. These data provided the individual household addresses for persons who requested household goods and the organization to which the requester was referred. The data showing the addresses of the organizations that provide household goods were acquired from the Human Services Resource Guide. Both the organization and the household addresses datasets contained X-Y coordinates that were geocoded onto the map. The CBO/volunteer group area polygons were obtained from the GIS Dataloader application.

The map cannot correctly project service area analyses because the household goods are being sent to a specific location. Another issue is the fact that we do not know if the need(s) of the requesters were met or unmet. There were also obstacles in creating renders for call patterns because the majority of calls requesting household goods averaged between one and three calls. The household goods data shows multiple records from the same address which signifies the number of calls for specific needs, not the number of needs requested by a single call. The best approach to joining these data were to use the data from Coordinated Services Planning and from the Human Services Resource Guide to create linkages between from the requester's household to the organizations they were referred to.

There are 203 direct links between volunteer organizations and requesters out of 245 needs. 42 requests were not matched because they were either referred to another unspecified organization or an organization that does not have a facility, for example Fairfax FISH and Koinonia. This was achieved through the direct relation between the X-Y coordinates of the households and the X-Y coordinates of the organizations to which they were referred.

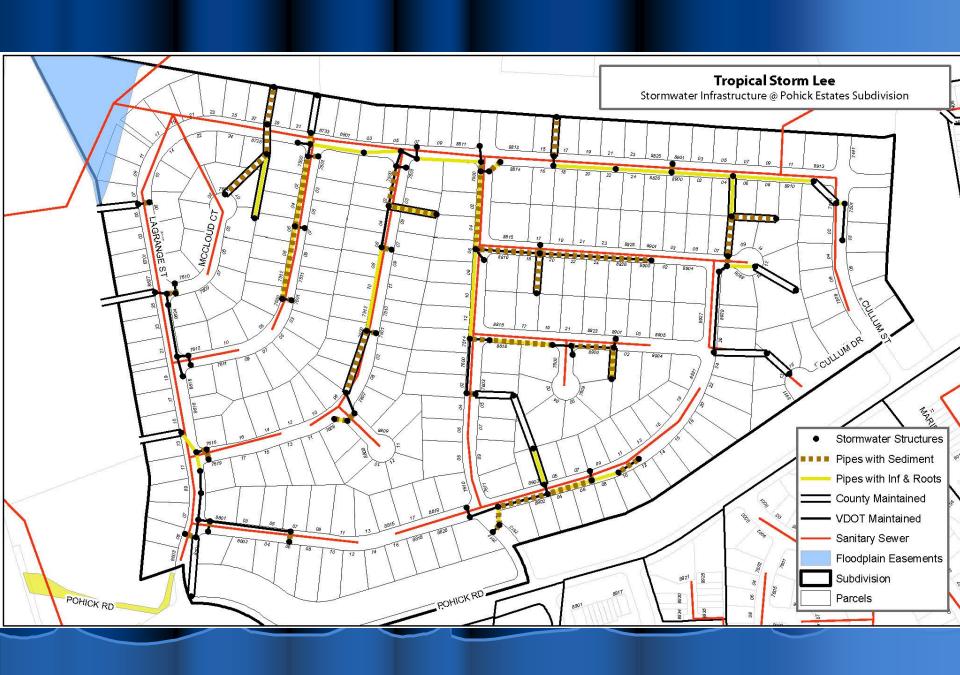
The results of this project illustrate direct links between the requesters of household goods and the organizations to which they were referred. The service area regions seen with the most lines are where the highest frequency of requests are. The color of the lines correspond with the color of the service area region representing which requester is paired up with which organization.



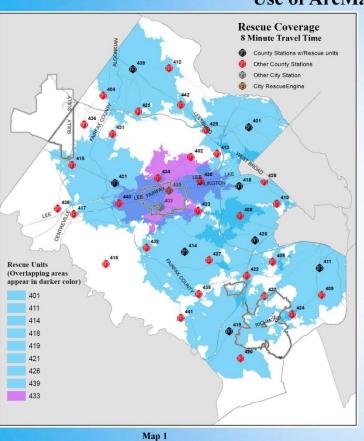


Source: Fairfax County Department of Neighborhood and Community Services, Coordinated Services Planning, ASSIST Household Goods Requests, CY 2012 and Human Services Resource Guide.





Use of ArcMap Transparency versus Adobe Layers



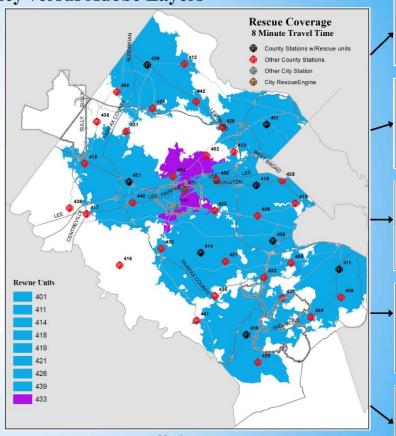
As part of the proposed budget reductions for FY2014, Fire-GIS was asked to prepare some coverage maps of different apparatus. These maps were created in two formats.

In the first format, the travel time for each unit is transparent. This gives an idea of how much of the County is not reachable within 8 minutes travel time (white) and how much of the County is reachable by multiple units (darker shades).

When maps are exported from ArcMap to pdf, the transparent layers are all treated as an image so individual layers cannot be turned off.

In the second format, the travel time is not transparent. As a static map it's not impressive. But for a decision maker, the layers property in Adobe can be used to interactively see the effect of eliminating different combinations of units.

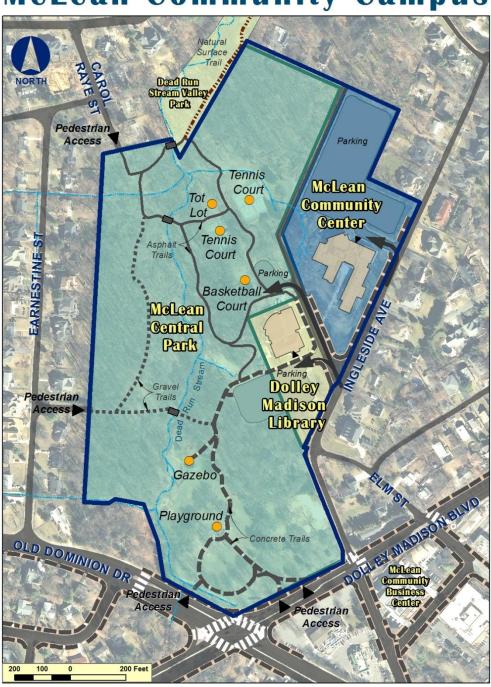
Several of the many combinations are shown on the far right.



Map 2

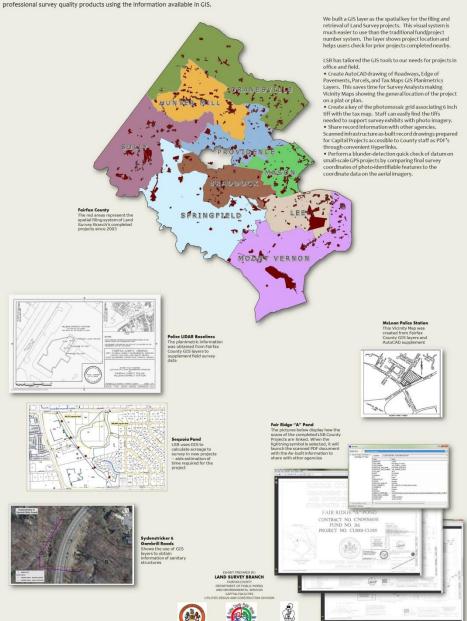
October 2012. Use of ArcMap Transparency versus Adobe Layers.pptx. Created from a few of the many map projects and maps located in G:\projects\frd\hq\projects\2012\Budget2014.

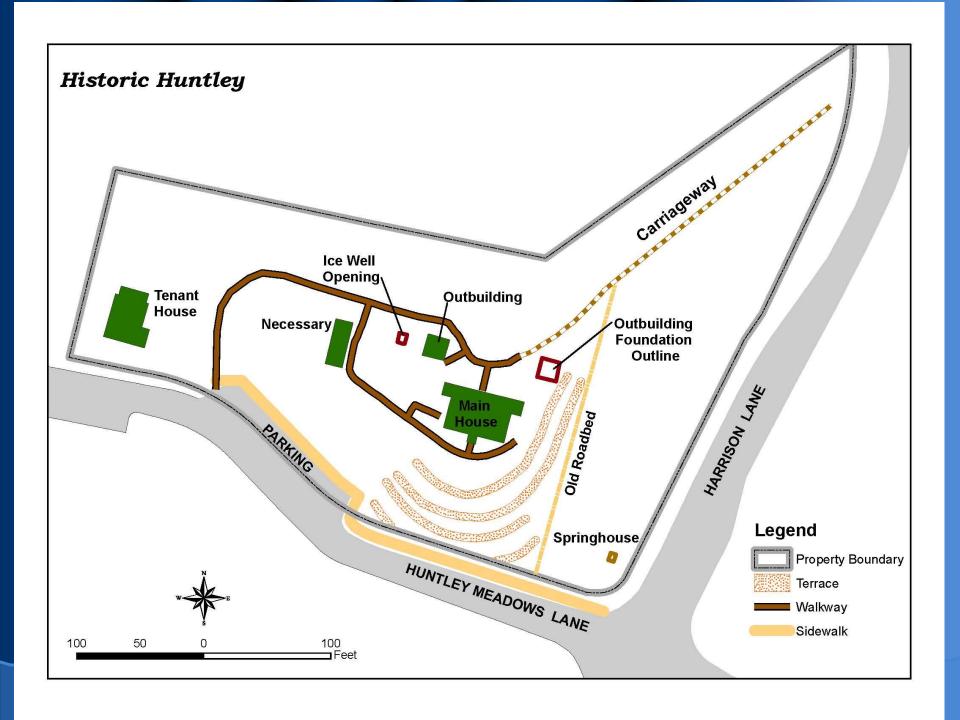
McLean Community Campus

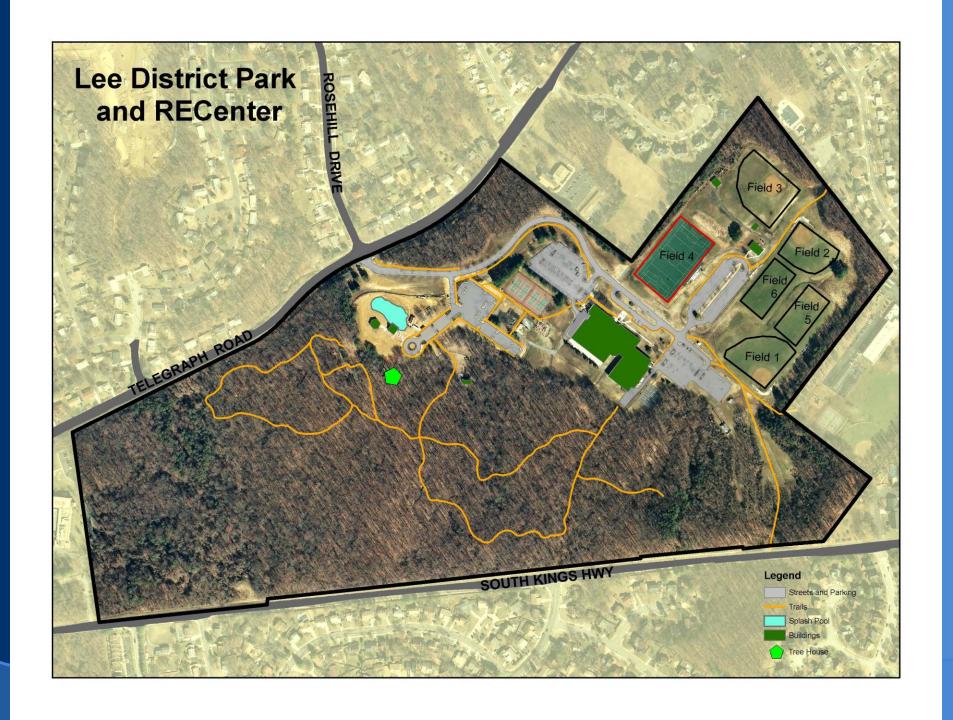


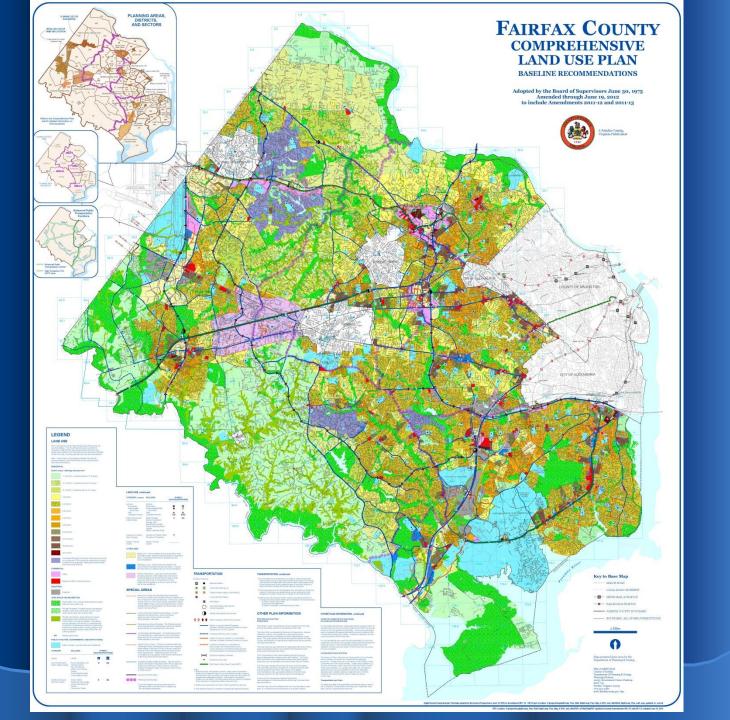
INTEGRATION OF GIS IN LAND SURVEY BRANCH

Land Survey Branch (LSB) integrates GIS into so many daily processes from pre-planning jobs through to completion! We do this through finding many ways to enhance our professional survey quality products using the information available in GIS.

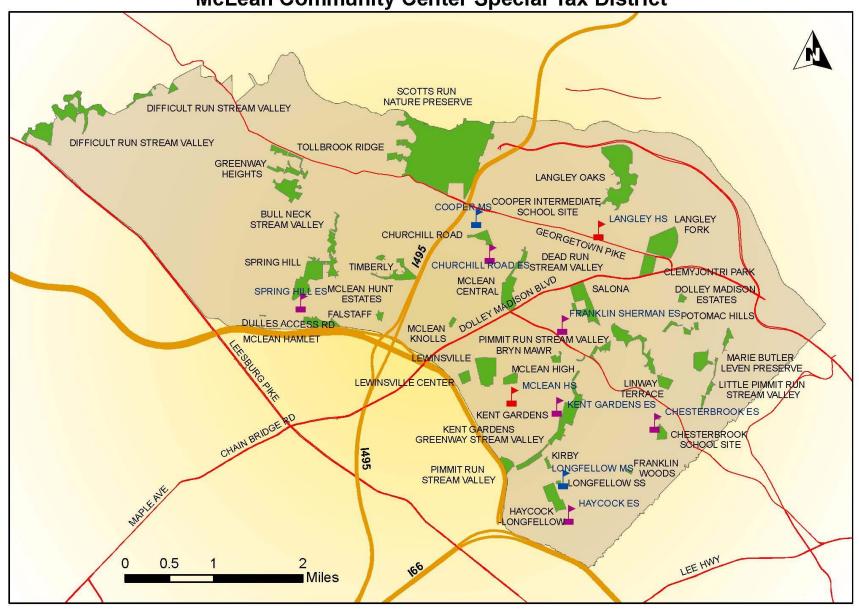








McLean Community Center Special Tax District



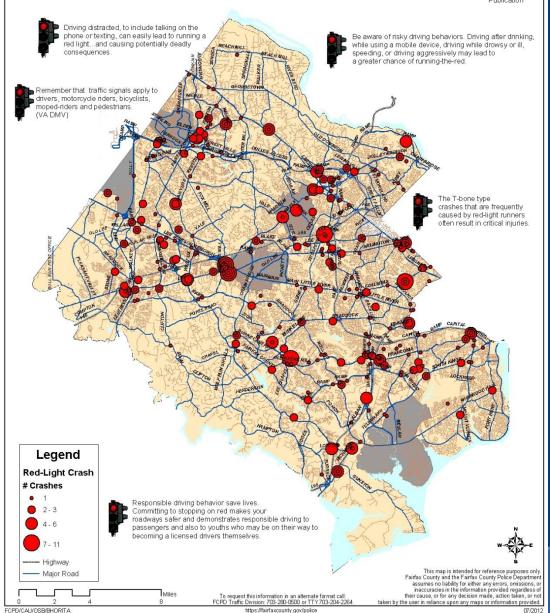
POLIT

Fairfax County Police Department, Traffic Safety Division's RESPECT the RED 2012

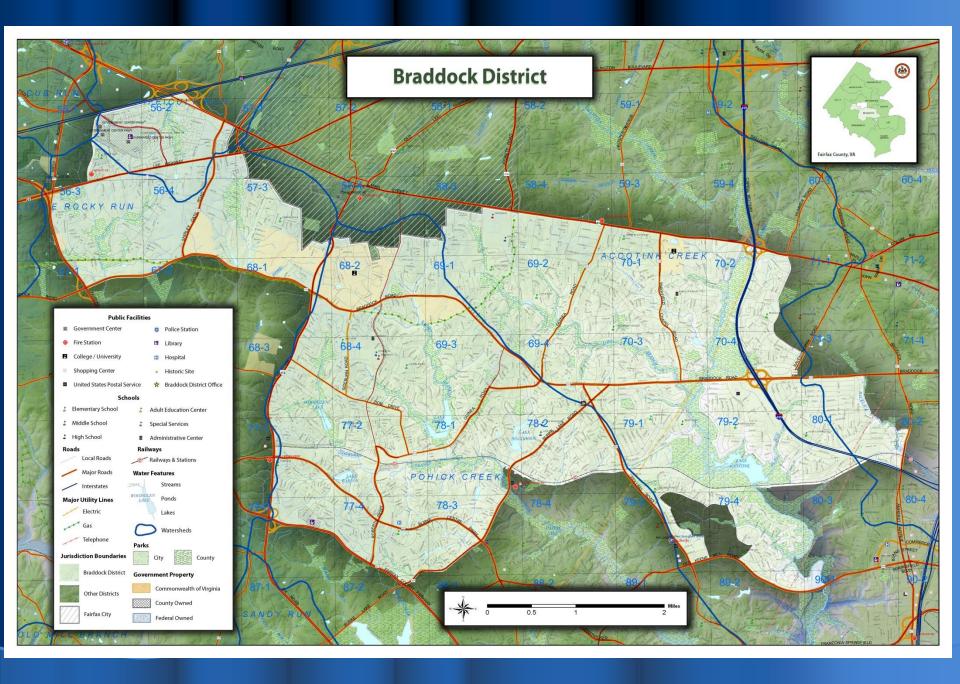
From 2011 through the first half of 2012, our county has experienced over 750 crashes caused by a driver running a red light. The Fairfax County Police Department continues to actively enforce traffic laws, support national campaigns such as "Stop on Red Week," and provides traffic safety education to the public.

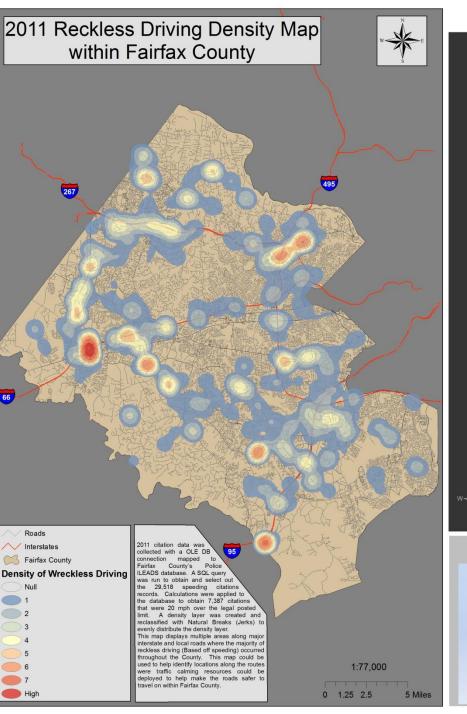


A Fairfax County, VA Publication

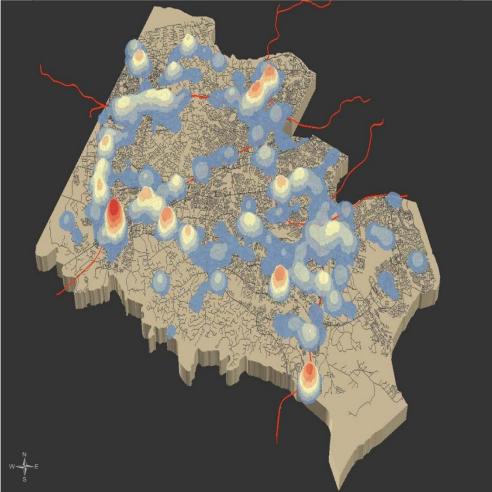


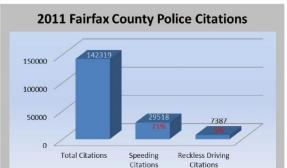














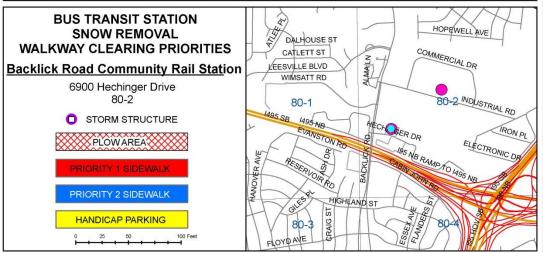






By; Jeffrey W. Gallagher Fairfax County Police IT Bureau

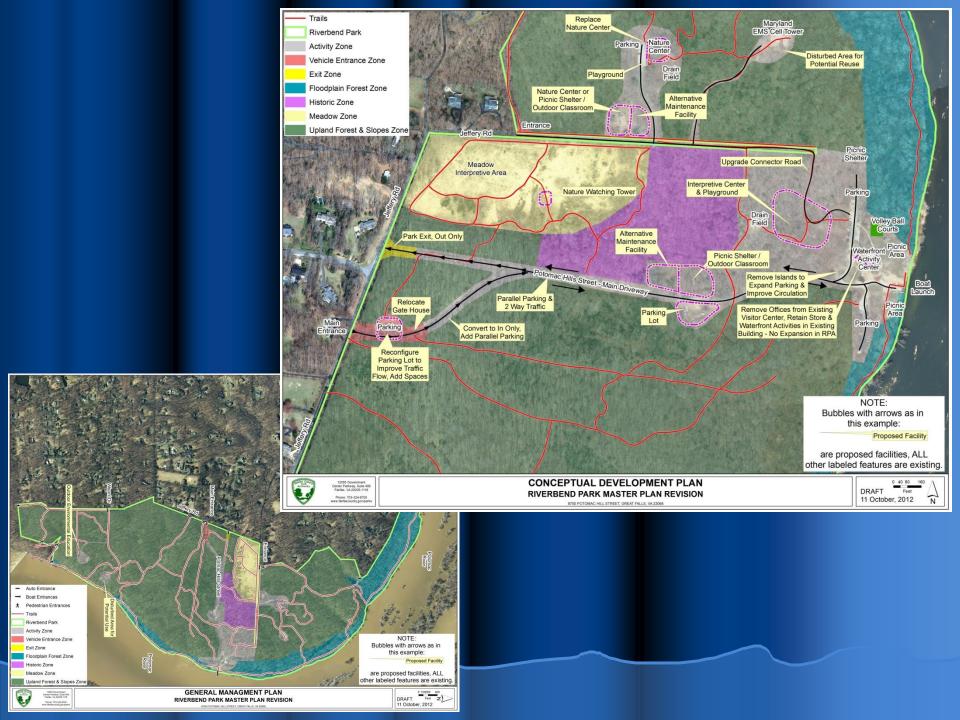




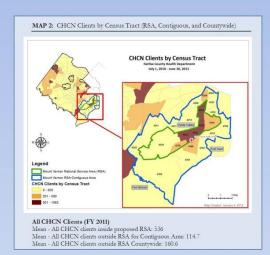
RIVERBEND PARK MASTER PLAN REVISION

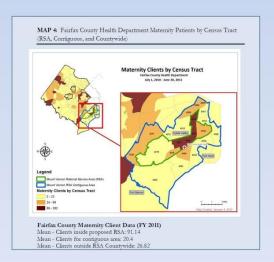


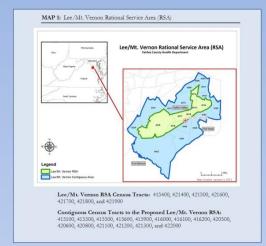
Fairfax County Park Authority



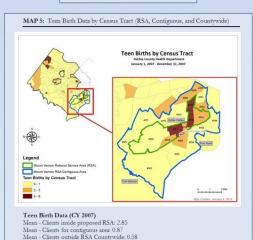
Exceptional Medically Underserved Population Designation

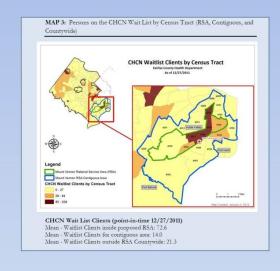


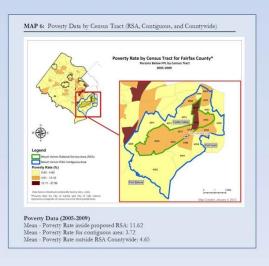


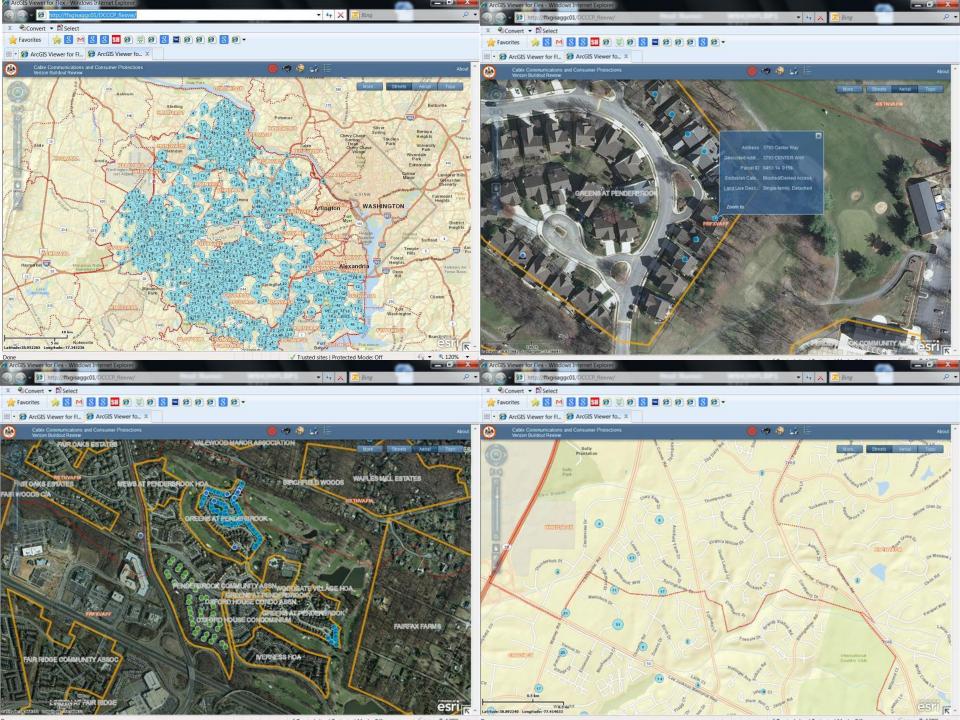












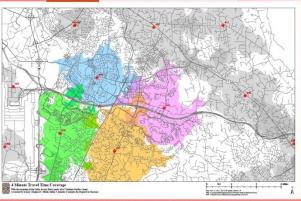
Objectives

- Review proposed development scenarios for the Reston-Dulles Corridor based on the Metrorail expansion of the Silver Line (4 additional stations.)
- 2. Analyze current incident activity in station first due response areas.
- 3. Recommend future emergency response needs resulting from the development scenarios.
- Provide comments to Department of Planning and Zoning for future Comprehensive Plan
 Amendments and development proffers.

Current Fire Station Response Coverage Areas (first dues) Fire station first due areas based on travel time from stations. Fire Stations: 404 Herndon 425 Reston

First Due Response Mag: First due map based on travel time. Includes soon to open Fire station 442. White areas are other nearby first dues from Loudoun County, Dulles Airport, and station 429 (Tyxons Corner).

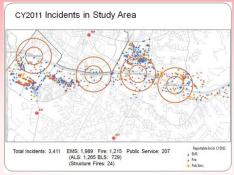
Reston-Dulles Corridor Study Area	2010 Existing Population	2010 Projected Population	Population Increase	CY 2011 Incidents	Projected 2030 Incidents	Incidents Increase	Projected Incident Growth by Metro Station Area
Wiehle Avenue	26,800	\$7,500	30,700	763	1,638	875	
Reston Parkway/Town Center	51,730	90,800	39,070	1,472	2,584	1,112	
	18,267	45,474	27,207	520	1,295	775	
	23,060	42,850	19,790	656	1,220	564	
	119,857	236,624	116,767	3,411	6,734	3,326*	



Reston-Dulles Corridor Study

Fire and Rescue Department

6/19/12



The data includes incidents on the roads internal to the study area, the perimeter roads (of the study area) and the Dulles Toll/ Access Roads. Reportable incidents do not include; notification & test events.

Summary

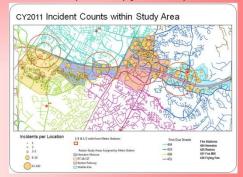
The Silver Metro Line is expected to increase population within the Reston-Dulles Corridor Study area by nearly 117,000 by year 2030. In anticipation of this increase, the Fire and Rescue Department evaluated future needs. Based on incidents per population formulas, the number of incidents is expected to nearly double from total 2011 incidents.

With increased calls for service and more high rise buildings, the major recommendation is to build a new full size fire station in the North County Government Complex.



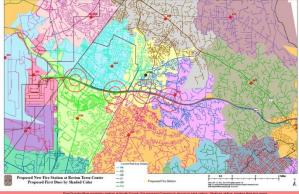
Recommendations

- 1. Add second Reston Fire Station in North County Government Complex.
 - -Standard size fire station with 3 apparatus bays.
 - -New station may be co-located within a building.
 - -Minimum of two additional units: Engine and Medic.
 - -Location will provide better coverage for travel and vertical response times.
- 2. Herndon Fire Station 4
 - -Approved plans include demolishing existing station and rebuilding a larger station onsite.
 - -Capacity for two additional units: Rescue and Medic.
 - -Estimated completion 2014-2015.
- 3. Ongoing analysis of incident activity based on development.
 - -A second Medic may be needed at Frying Pan Fire Station by 2030.



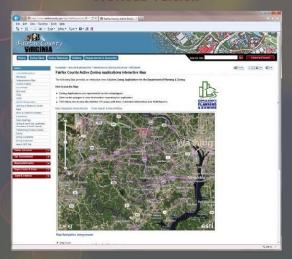
First due by colored roads. Individual metro study areas by colored areas.

26,800 51,730	57,500 90,800	30,700 39,070	763	1,638	875
51,730	90,800	39 070			
		33,070	1,472	2,584	1,112
18,267	45,474	27,207	520	1,295	775
23,060	42,850	19,790	656	1,220	564
119,857	236,624	116,767	3,411	6,734	3,326*



Planning & Zoning Viewer - Enhancement

Previous Version

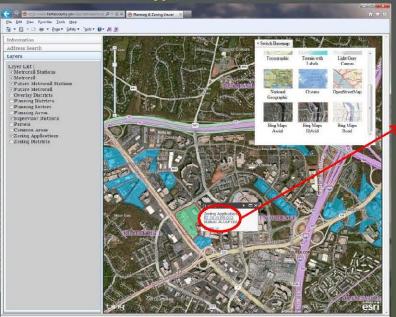


The newly enhanced web map for the Department of Planning & Zoning has been released. Users can now search for an address, toggle on / off layers and has the ability to switch base maps.

Maps/Intro Page



Application

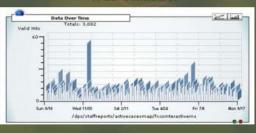






This application has allowed Citizens, Staff and Public Officials to have better access to information about Zoning Applications and related information in one spot. We hope to continue to add additional data and functionality into the application.

Web Statistics



about

TEENAGE DEPRESSION & SUICIDE IN FAIRFAX COUNTY

Sophia Dutton and Mary Nelms, Department of Neighborhood and Community Services

The Fairfax County Youth Survey defines depression as feeling so sad or hopeless almost every day for two weeks or more that the student stopped doing some usual activities. Overall, 29% of students responded that they experienced depressive symptoms in the past year. Students were also asked if they had considered attempting suicide or actually attempted suicide in the past

A higher percentage of female students reported symptoms of depression, considering suicide, and actually

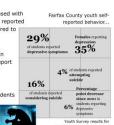
attempting suicide than male students.

Rates of depression increased with grade level. Sixth-graders reported depression at 22% compared to 32% of 12th-graders.

Similar to national trend races/ethnicities other th white are more likely to depressive symptoms ar thoughts of suicide.

Rates of depression are significantly higher for si who reported past 30-day substance use than for those who have not used drugs or alcohol in

the past month.



ds, than	of students reported depressive symptoms 35%					
report and	16%	1111	students reported empting icide			
students	of students r considering s		point decrease since 2001 in students reporting depressive symptoms			
1			Survey results for , and 12th Graders			

	Fairfax County Youth Survey Data								
	National YRBS**	Fairfax Countywide	8th Grade	10th Grade	12th Grade	Female	Male		
Depression	29%, 29%	29%	25%	31%	32%	35%	23%		
Considered Suicide**	17%, 14%	16%	14%	18%	16%	20%	12%		
Attempted Suicide	8%, 6%	4%	3%	4%	4%	5%	3%		

Fairfax County Youth Survey was administered in the fall semester of 2011.

related factors

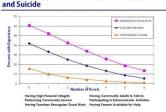
Fairfax County Youth who are depressed are ...

- . More likely to have used drugs or alcohol.
- · More likely to be sexually active.
- . More likely to skip school.
- . Less likely to seek parental support for problems.

A CLOSER LOOK AT DEPRESSION 29% Ava Hispanic Other or Multiple White 20% 40%

THREE TO SUCCEED Thriving in Fairfax

Assets and Experiences of Depressive Symptoms



Three to Succeed is based on the outh Survey analysis that shows having just three assets dramatically reduces risk behaviors and promotes thriving youth.

Assets are strengths in young people, their families, friends, schools and communities that help them thrive in health, in school, in daily life, and in a safe environment. The more assets a person has, the fewer risk behaviors they report and the Youth Survey shows that every asset makes a difference.

Young people in Fairfax County report positive influences from the people and other assets in their lives, though there are disparities that make it more challenging for some to thrive. Take action to be an asset in any young person's life and help build a stronger, more positive community that benefits ALL children.

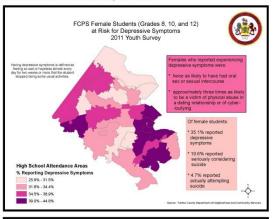
websites for more information

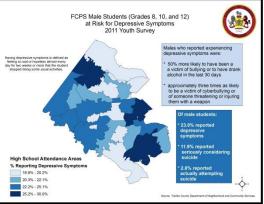
who can help?

ention Lifeline Stop A Suicide Today http://www.stopasuicide.org National Alliance on Mental Illness www.nami.org

airfax-Falls Church Community Services Board (CSB) lour CSB Emergency Services Phone: 703-383-8500 | Y: 703-207-7737 sirfax County Public Schools Intervention ww.fcps.edu/dss/ips/ | 571-423-4020

Link Suicide Prevention Hotline: (703) 527-4077 onal Suicide Prevention Lifeline: (800) 273-TALK (8255)





what can you do?

* These signs of

depression are even

more common in

teenagers than in their

adult counterparts.

if your teen shows signs of

- Sadness or hopelessness. ·Irritability, anger, or
- hostility.*
- Tearfulness or frequent ·Withdrawal from friends and
- family or changing "crowds" altogether.* ·Loss of interest in activities; difficulty
- concentrating.
- •Unexplained aches and pains.*
- Changes in eating and sleeping habits. Restlessness and agitation.
- •Extreme sensitivity to criticism and feelings of worthlessness and quilt.*
- ·Lack of enthusiasm and motivation.
- ·Fatigue or lack of energy. •Thoughts of death or suicide.

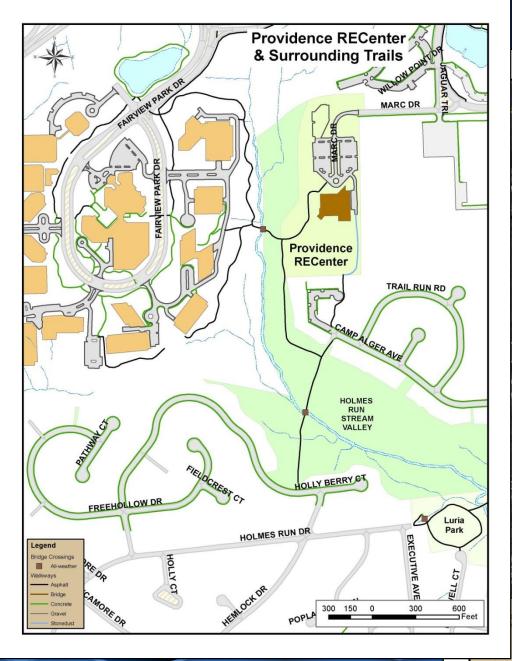
if you are concerned

•Talk to your teen about

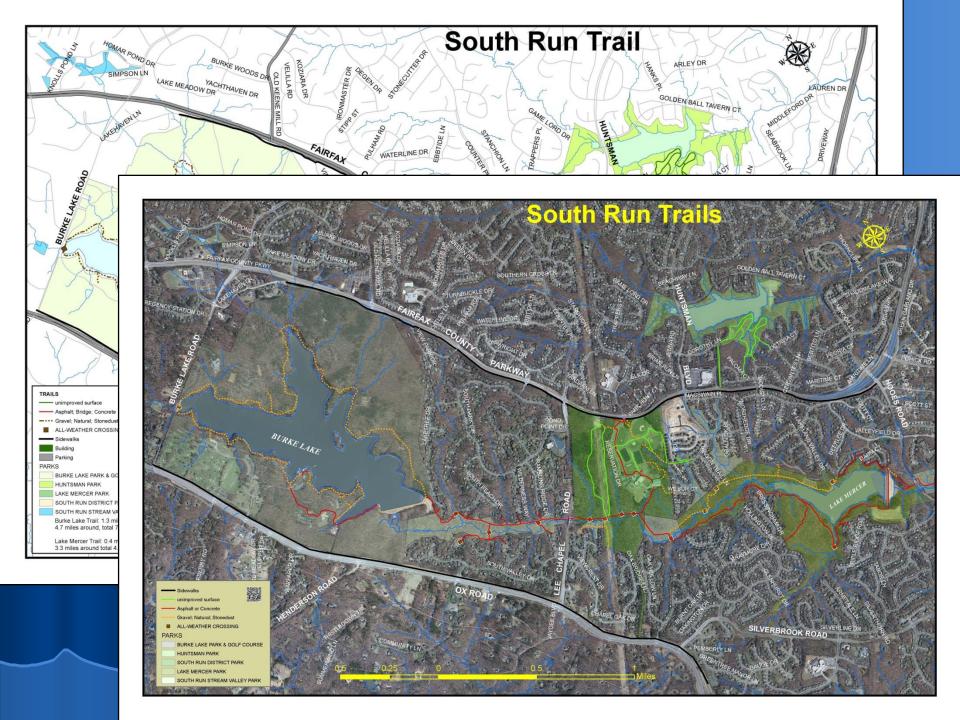
- depression and what you've been observing Offer support and let them know
- you are there for them.
- •Be gentle, but persistent. Don't give up.
- ·Listen without lecturing; avoid giving unsolicited advice or ultimatums. •Validate their feelings; acknowledge their pain
- •Talk with the psychologist, social worker, or
- counselor at your child's school to discuss the signs. They may conduct a depression
- ·Seek professional help from your family doctor and share the findings from the school assessment, if completed.
- •If there are no health problems, ask your doctor for a referral to a psychologist or psychiatrist. Discuss treatment options.

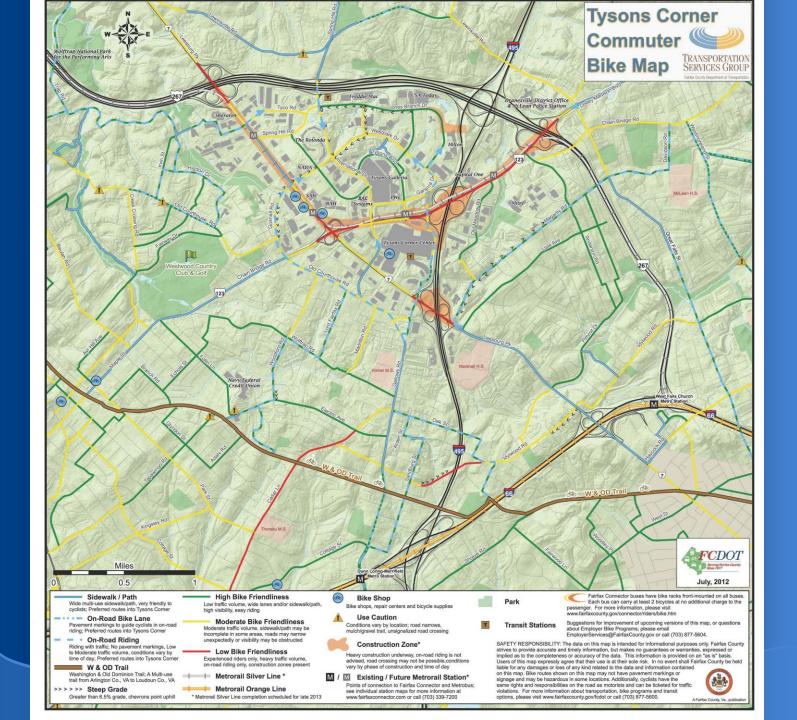
Source: www.helpquide.org

^{**} National comparisons are from the Touth Bisk Behavior Survey (1985) administered by the Centers for Disease Control and Prevettian (CDC) to 9th-12th grade students. Data Roted for 1985 are for 10th and 12th grade, respectively.





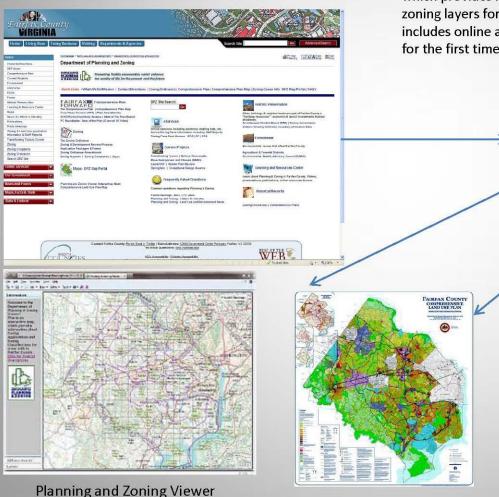






The Department of Planning and Zoning (DPZ) Map Portal/DPZ Public Website

Since 2008 the Department of Planning and Zoning (DPZ) has focused on evolving the DPZ website to make it increasingly more user-friendly, providing quick access to important, relevant and timely information to the public in large part by increasingly using and incorporating GIS data throughout the site.

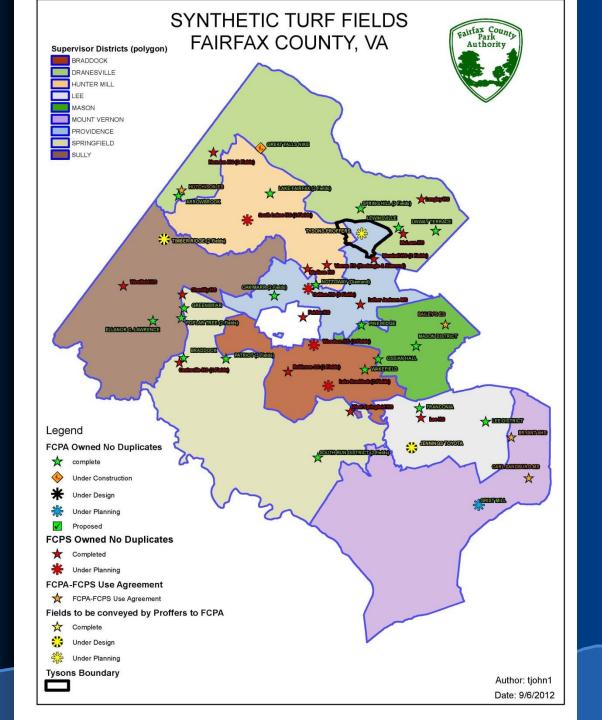


The DPZ Map Portal Page brings DPZ developed maps generated by the use of GIS from diverse sources to a dedicated page for displaying information efficiently with user friendly access and navigation in a one-stop shop. It showcases DPZ GIS maps as well as links to county-wide GIS resources. It's centerpiece is the interactive Fairfax County Planning and Zoning Viewer, which provides information about current zoning applications and associated zoning layers for areas with in Fairfax County, Virginia. The Portal also includes online access to the Fairfax County Comprehensive Land Use Map for the first time.

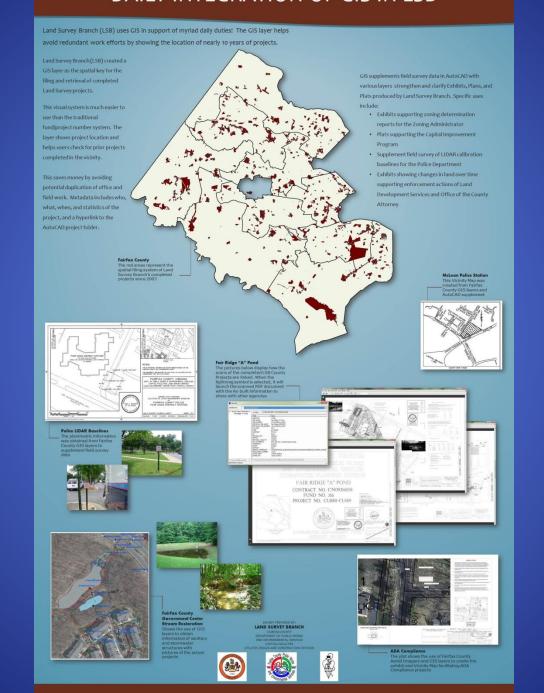
Marie de

These and other examples of incorporation of GIS into the DPZ website continues to evolve it to bolster staff efficiency and assist the agency in achieving its goal of efficiently delivering easily accessible, user friendly access to DPZ information and services to the public, development community, staff, county officials and others to fulfill our mission

Comprehensive Land Use Plan Map



DAILY INTEGRATION OF GIS IN LSB





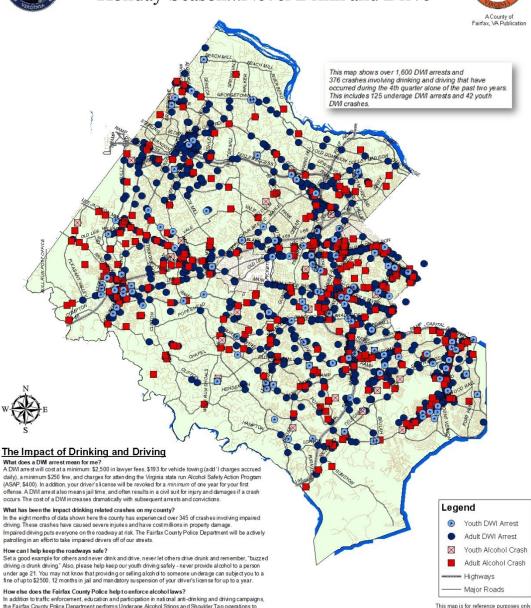
Help Keep Fairfax County Roadways Safe this Holiday Season...Never Drink and Drive



Fairfax County and the Fairfax County Police Department

assumes no liability for either any errors, ommisions, or inaccuracies in the information provided regardless of their cause.

or for any decision made, action taken, or action not



To request this information in an alternate format call:

FCPD Traffic Division: 703-280-0500 or TTYP 703-204-2264 taken by the user in reliance upon any maps or information provided.

the Fairfax County Police Department performs Underage Alcohol Stings and Shoulder Tap operations to

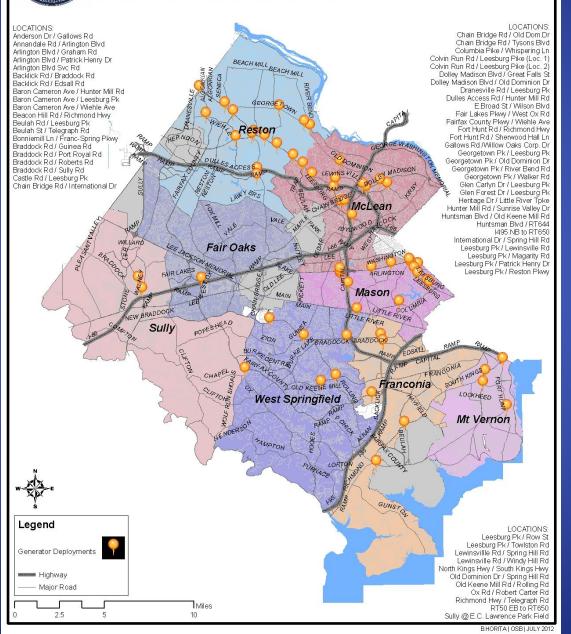
enforce allohol laws and curb local business and citizens from providing alcohol to our underage youth.



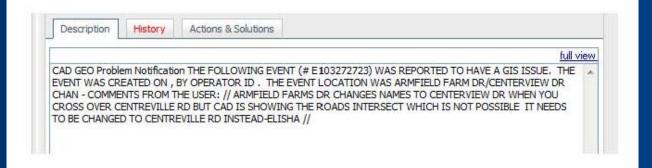
FCPD GENERATOR DEPLOYMENTS - JUNE 29th MID-ATLANTIC STORM

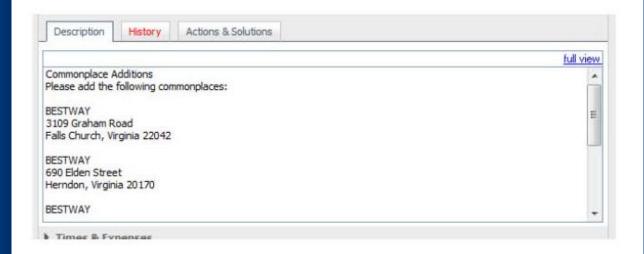
Fairfax County Police Department, Operations Support Bureau, Traffic Division

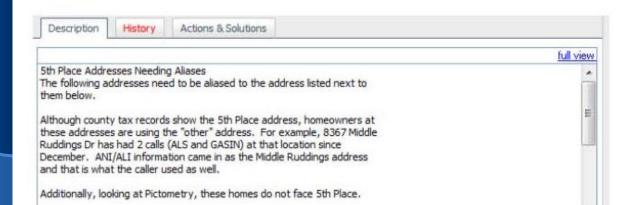
Map shows generators deployed from Friday, June 29th through Thursday, July 5th to mitigate traffic safety issues caused by the June 29th, Mid-Atlantic storm. Generators were placed at 61 separate locations countywide.



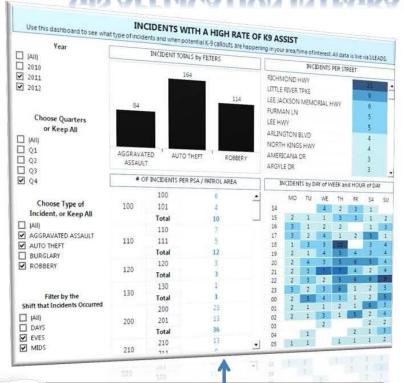
Sample problems submitted by CAD end-users:







GIS APPLICATION INTEGRATED INTO CANINE UNIT OPERATIONS



Step 1

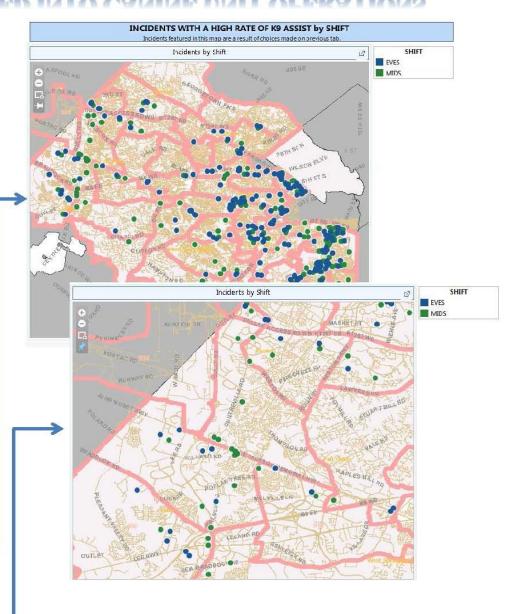
Users begin here, with making selections to filter out the incidents they would like to view. The main feature of this mapping project is to examine incidents occurring by officer shift, either Days, Eves, Mids or a combination. In the figure shown above,4th quarter incidents are being examined that are occurring during the Eves and Mids shift (1400hrs through 0500hrs).

Step 2

From the selections made previously, a user then clicks on a tab which displays a map of the county borders. The map will automatically plot incidents in the spatial area and separate them by which shift they occurred in. A color key to the right alerts to what shift(s) are being displayed.

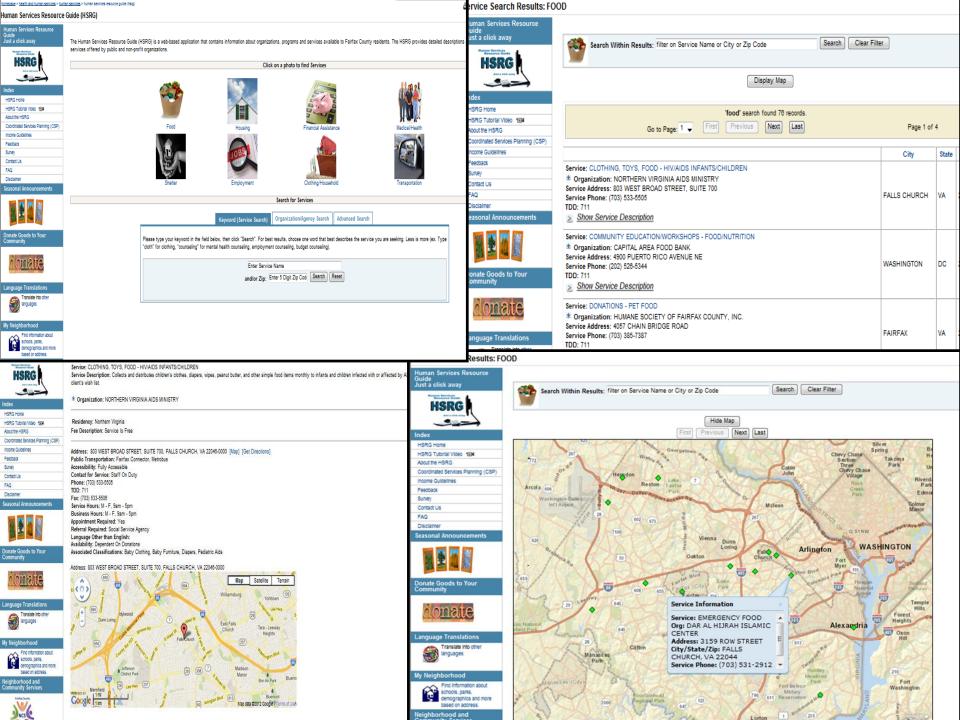
Step 3

Next, using the tool bar, the user can zoom in on an area to view smaller street names and get a closer look on where activity is occurring and to use this to support their operational patrol.



Application: Tableau BI Software. Version 7.0

Richmond Highway Community Business Center Housing Study Richmond Highway Community Business Centers and Adjacent Suburban Neighborhoods **Seven Corners Housing Study** Arlington County





MASON DISTRICT PARK
6621 Columbia Pike, Annandale - Maintenance Area 2 - Mason District
Level 1's- Field 1 & 2 Level 2's- Field 4 Level 4's- Field 3



ARROWBROOK CENTER PARK

2351 Field Point Road, Herndon - Maintenance Area 6 - Hunter Mill District





Automation Presentation — Public Hearings







Benefits of Digital Presentations

- Document Management
- > Illustrative Pictures
- > GIS Incorporated into presentations
- > Adds Professionalism





colego/university use within an existing building
No size improvements or exterior modifications
to outliding proposed
Other nursing degree program and diploma
programs in medical administrative-related fields.



The Project gives the policy makers and the citizens of Fairfax County detailed presentations to aid in their decision making process.

