NEIGHBORHOOD TRAFFIC CALMING PROGRAM

Making Neighborhoods Safer

Adopted
February 23, 2015

Introduction

The City's Neighborhood Traffic Calming (NTC) Program is designed to improve transportation safety in residential neighborhoods and be responsive to neighborhood concerns about traffic conditions. Most importantly, the Program includes substantial community input in the design of traffic calming solutions and relies on residents to bring traffic calming needs to the attention of City staff. This approach helps ensure that traffic calming solutions are crafted to address unique neighborhood interests and to be consistent with neighborhood character.

What is Traffic Calming?

Traffic calming is a procedure designed to improve quality of life and increase safety for pedestrians and bicyclists by reducing motor vehicle speeds and/or volumes.

The traffic calming toolbox includes a wide range of measures. This includes informational measures, such as education and signage. It also includes physical measures, such as speed humps and curb extensions.

Traffic calming is related to, but different from traffic control. See Appendix A for a description of the differences. Traffic calming is implemented through neighborhood engagement whereas traffic control is handled administratively by City staff.

Why Does the City have a Traffic Calming Program?

The City adopted this traffic calming program to improve safety on neighborhood streets and respond to resident concerns about traffic conditions. The Program is needed to provide policy guidance on how to respond to requests, including how many resources to commit to traffic calming, how to prioritize requests, and how much public engagement is necessary.

Why Hasn't Traffic Calming Already Been Installed?

Traffic Calming may not be appropriate for all streets. A significant part of traffic calming is neighborhood character; what works for one group of residents may not be appropriate for another.

On a more practical note, the City's street network was developed over hundreds of years. It is impractical to assume all of the streets can be redesigned and reconstructed quickly. Therefore, a methodology is needed to prioritize requests.

Vision and Goals

The NTC Program is guided by the following vision:

<u>Vision Statement</u>

> *Provide shared, safe access on neighborhood streets for pedestrians, bicyclists, transit users, and motorists in the City of Falls Church, Virginia.*

Pursuant to that vision, the NTC Program incorporates the following goals:

<u>Goals</u>

- <u>Improve Safety</u>: provide a forum for citizen concerns about transportation safety on neighborhoods streets, including issues of speed, visibility, street designs, lighting, etc.
- <u>Be Responsive</u>: respond to citizen requests for increased safety and street changes in residential areas.

- Increase Mode Choice: implement projects that provide access to multiple modes of transportation, including automobile, transit, cycling, and walking.
- Invest Responsibly: address cases with the greatest needs first and minimize project costs without sacrificing effectiveness.

Program Framework and Timing

As stated in the vision and goals, the NTC Program needs to be both responsive and responsible. Being responsive means acting quickly after receiving neighborhood requests and allowing for sufficient neighborhood input on proposed solutions. Being responsible means addressing requests with the greatest need first and considering low cost measures.

This Program framework establishes the process for responding to traffic calming requests. The individual steps are described in more detail in subsequent sections.

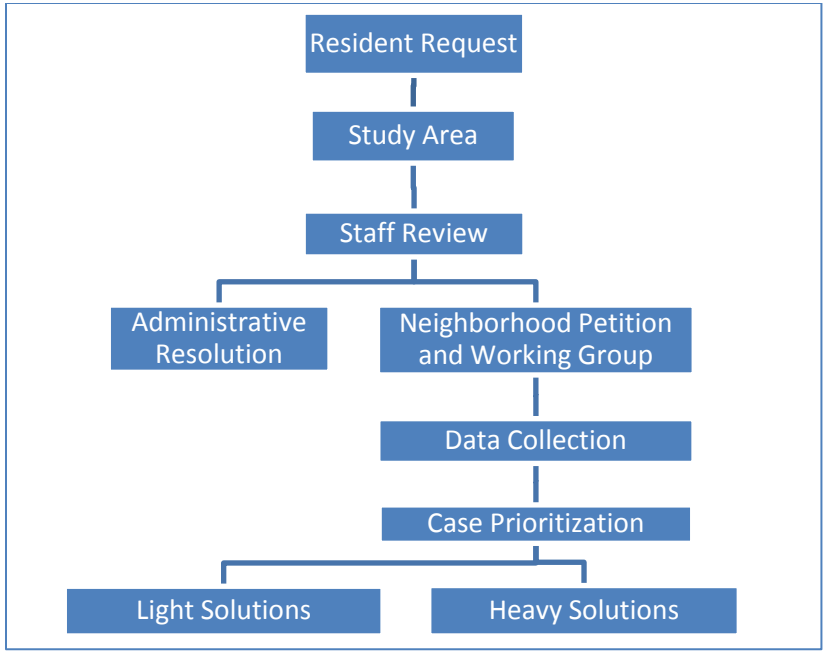


Figure 1: NTC Program Framework

Once a case advances to the front of the priority queue, the expected turn-around time is 3 months for administrative cases, 6 months for light solutions, and 12 months for heavy solutions. These timeframes are best-case scenarios. The following factors could delay this timeline: availability of funding, availability of staff, level of consensus among neighborhood, complexity of problem, other cases in the program queue, and time of year (impacts data collection and construction schedules).

Program Steps

This section describes the individual steps within the larger program framework.

Resident Request

The NTC Program is intended to be responsive, so an NTC case can only be started by a resident request. Note that this NTC Program does not restrict the authority of City staff to address immediate safety concerns. Further, this Program does not restrict the authority of City Council, the Planning Commission, or City staff to implement traffic calming in coordination with land (re)development projects. A City resident may make a request by contacting the City's Planning Division in the any of the following ways:

- Telephone call: 703.248.5040
- Email plan@fallschurchva.gov
- Letter: 300 Park Avenue, Suite 301W, Falls Church VA, 22046

Upon receiving a request, a City staff member will contact the resident making the request to discuss the issue and to ensure that the staff member fully understands the resident's concerns.

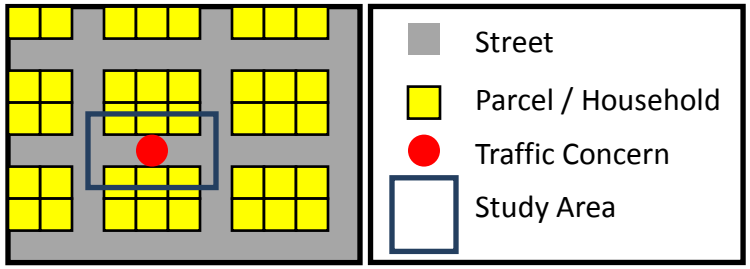
Planning staff will coordinate with the Department of Public Works to ensure related requests are handled together. This coordination should improve efficiency and allow for quicker delivery of solutions.

Study Area

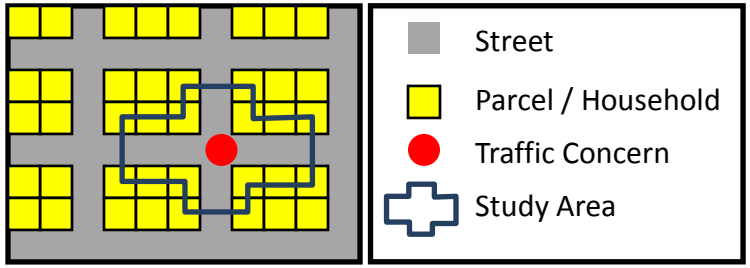
After confirming the requestor's concerns, City staff will determine the study area for the request. Study areas are determined according to pre-determined criteria to ensure program equity.

This mechanism for determining study areas seeks to balance the challenges associated with overly small and overly large study areas. Also important, this mechanism is transparent and easy to implement.

Mid-Block Concerns: If the traffic concerns are midblock, then the study area will include that block, into the intersections at either end, but will not continue through the intersections.



Intersection Concerns: If the traffic concerns are at an intersection, then the study area will include all street segments touching that intersection as far as the next intersection.



If multiple concerns are identified in a single application, these study area patterns should be combined to encompass all parcels consistent with the above concepts.

Staff Review

After contacting the requestor, City staff will meet internally to determine whether the request can be handled administratively or whether it needs to be handled through a larger public engagement process.

Appendix A describes the types of cases that can be handled administratively and the types of cases that require a larger public engagement process.

Administrative Resolution

If the case can be handled administratively, the City's Department of Public Works will determine and implement the appropriate traffic control. In determining the appropriate solution, City staff will use best practices from nationally recognized standards, such as the Manual of Uniform Traffic Control Devices (MUTCD), and guidelines from the Institute of Transportation Engineers (ITE) and the National Association of City Transportation Officials (NACTO).

Neighborhood Petition and Working Group

If the case cannot be handled administratively, then a larger public engagement process is required. To begin this process, the requestor must distribute a petition for traffic calming among households in the study area. See Appendix B for a petition template. Because non-administrative solutions involve potential changes to neighborhood character, a majority of the neighborhood (51 percent) must sign the petition for the case to move forward.

See Appendix C for a description of how neighborhood support is calculated.

As part of the petition, property owners may indicate if they desire to participate in the neighborhood working group. The working group has several responsibilities (defined in the following paragraph) and requires regular participation of its members.

The working group is responsible for developing a context appropriate solution that is effective, cost-efficient, and acceptable to the neighborhood, balances transportation needs of other users of the street, and considers possible spillover effects onto adjacent streets. Working group members should regularly engage with the neighborhood to ensure neighborhood consensus exists for proposed solutions.

The working group will also be required to select a neighborhood representative. The neighborhood representative will serve as a liaison among City staff, the working group, and the neighborhood. The liaison is responsible for keeping the neighborhood informed of project status and communicating decisions of the working group to City staff.

Data Collection

Once 51 percent of the study area has signed the petition, staff will proceed with data collection. Staff will collect the following data:

- vehicle volume,
- vehicle speed,
- on-street parking utilization, and
- sight distance limitations and other design deficiencies

After collecting data, the City's Police Department will include the study area in the rotating deployment schedule for the mobile speed feedback trailer. The trailer will be deployed for two weeks at a time at each location. The study area will remain in the rotation for the mobile trailer until the case is resolved.

Case Prioritization

Because City staff typically receives more requests for traffic calming than it can process, a prioritization system is needed to respond to cases with the greatest need first. The methodology is intended to be valid (correctly identifying the cases with the greatest need), meaningful (uses metrics that are easily understood), and equitable (accepted as a fair way of assessing need).

The case prioritization relies on measures of

- motor vehicle speed,
- motor vehicle volume,
- design deficiencies, and
- proximity to "pedestrian generators," such as schools, parks, transit stations, and commercial areas.

Cases are prioritized based on the risk to which pedestrians are exposed and the likelihood of a pedestrian suffering a severe injury as a result of a crash with a motorist. The calculations used to estimate this risk are provided in Appendix D.

Based on the prioritization methodology, the CACT will assign a queue order to the case. Additionally, the CACT will determine whether the case should be addressed with light solutions or heavy solutions.

Light Solutions

Light traffic calming solutions include applications of paint to visually narrow travel lanes, signage to alert drivers to exercise caution, and non-physical interventions.

In many situations, light solutions can be just as effective as heavy solutions. Light solutions are relatively inexpensive to implement and can more easily be modified, if needed, after installation.

Taking into account the factors in the above paragraph, light solutions can be implemented with approval of (1) the neighborhood working group (as communicated by the neighborhood representative) and (2) City staff.

Heavy Solutions

Heavy traffic calming solutions include construction of speed humps, curb extensions, chicanes, and other physical measures.

Heavy solutions are appropriate in situations where light solutions will not be effective. In comparison to light solutions, heavy solutions are more expensive and more difficult to change after installation. Because heavy solutions have larger budget implications and must be more carefully designed, heavy solutions require the approval of (1) 67 percent of the neighborhood (as described in Appendix C), (2) a majority of the CACT, and (3) City staff.

Rolling Applications

Staff will accept applications on a rolling basis; there is no annual deadline for application submission. This prevents neighborhoods from being "locked-out" if they miss an application deadline.

Application Waiting Period

There are two cases in which applications will be subject to a waiting period. The first such case is when a case for the same area was just completed. The second case in which an application will be subject to a waiting period is when a neighborhood could not reach a decision on how to proceed.

Recently Completed Cases

If a case was recently completed, the neighborhood must wait one year before submitting another application. Staff will evaluate impacts of installed solutions one year after installation. If the neighborhood wants to make further changes, it can submit an application any time after this one year evaluation period.

Failure to Achieve Consensus

The Program framework balances community desires against available resources, both financial and staff time. As such, only one or two cases can be active at any given time. To prevent one case from holding up other cases, cases that fail to achieve consensus will be dismissed. Once dismissed, neighborhoods will have to wait two years before reapplying.

The process for dismissing cases under this provision is:

1. Once a case clears the case prioritization queue, the neighborhood working group will have six months to develop a consensus solution.
2. If a consensus cannot be reached within six months, staff will bring the case to the CACT for review.
3. The CACT will review the case and determine whether the neighborhood is likely to achieve consensus if given another three months to deliberate.
4. If the CACT does not think consensus can be reached in three months, the case will be dismissed.
5. If the CACT does think consensus can be reached in three months, the neighborhood working group will be granted an additional three months. If consensus still cannot be reached after that time, then the case will be dismissed.

The intent of this provision is not to punish neighborhoods. Instead, the intent is to ensure staff resources are spent efficiently. If a neighborhood is unable to agree on how to proceed, then the two year waiting period will allow staff to address concerns from other neighborhoods before revisiting the same issues.

Appendix A. Traffic Control and Traffic Calming

Traffic Control

Certain Neighborhood Traffic Calming (NTC) requests may be forwarded to the Department of Public Works (DPW) to be handled administratively. No application is needed for traffic control, which enhances the roadway with devices including signs, traffic signals and pavement marking.

These serve as visual reminders to alert the public of current traffic regulations, such as no parking zones, and potentially hazardous conditions, like icy bridges or sharp curves.

Another purpose of traffic control is to assign right-of-way between motorists and among various modes of travel.

To have a traffic control device installed or upgraded within the City, please contact the DPW at 703-248-5350 or email dpw@fallschurch.gov.

Figure 2: Curve Warning and Advisory Speed Sign

Figure 3: Marked Crosswalk, Traffic Cones, and Yield Markings

Traffic Calming

Traffic calming modifies the roadway in order to discourage unsafe driving behaviors.

"Light" solutions change the appearance of the roadway to make speeding uncomfortable. Examples include narrowing travel lanes with pavement marking or installing radar feedback signs that display motorists' speeds.

"Heavy" solutions employ physical obstructions to aggressive driving and speeding. These are usually more expensive and take longer to implement than light solutions. Examples include speed humps or concrete bump-outs.

While the methods used have several differences, both traffic calming and traffic control aim to influence behavior positively and to ensure safe usage of our roadways for all users.

Figure 4: Light Solution, Painted Curb Extensions

Figure 5: Heavy Solution, Chicanes

Traffic Control and Traffic Calming

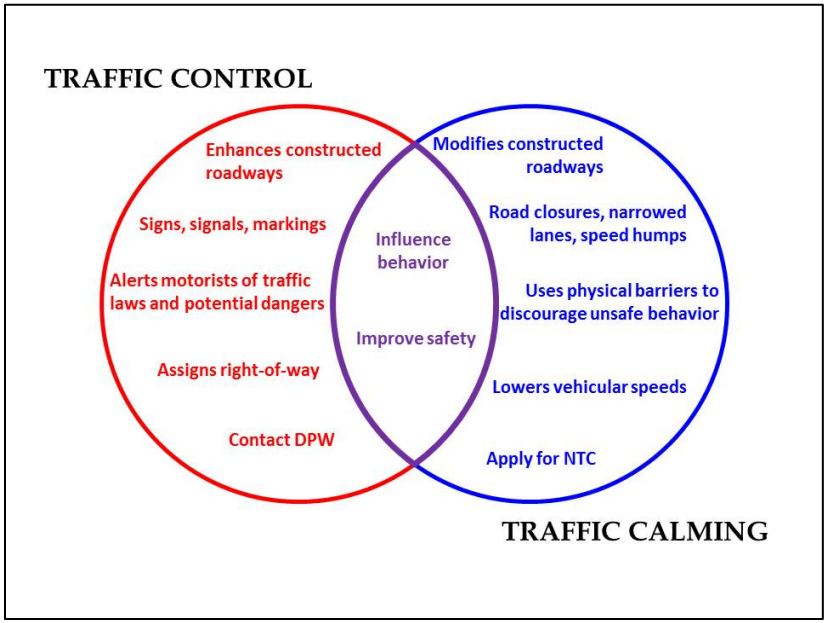


Figure 6: Differences and Similarities of Traffic Control and Traffic Calming

Appendix B: Neighborhood Petition

A City resident has requested that traffic calming be installed in your neighborhood. Traffic calming can be as simple as paint and signage or as complicated as speed humps and curb extensions. The nature of the solution in your neighborhood and a recommendation on whether or not the solution is installed will be determined through a public engagement process.

Please indicate whether you are open to having traffic calming installed in your neighborhood and whether you would like to serve on the neighborhood working group.

The working group is responsible for developing a context appropriate solution that is effective, cost-efficient, and acceptable to the neighborhood, balances transportation needs of other users of the street, and considers possible spillover effects onto adjacent streets. Working group members should regularly engage with the neighborhood to ensure neighborhood consensus exists for proposed solutions.

More information about the City's Neighborhood Traffic Calming Program is available on the City's website, http://www.fallschurchva.gov/ntc.

Map of Study Area

Name, Property Address, Signature	Open to Having Traffic Calming Installed		Want to Serve on the Neighborhood Working Group	
	Yes	No	Yes	No

Appendix C: Neighborhood Approval of Heavy Solutions

Heavy solutions involve physical changes to neighborhood streets and will have permanent impacts on the character of streets. Therefore, heavy changes require broad neighborhood consensus.

Neighborhood streets serve many different users, including owners and renters of single-family homes, owners and renters of multi-family homes, and owners and renters of commercial and retail space. The mechanism described here for assessing neighborhood consensus balances representation across all of these groups.

Owners and Renters

Although both owners and renters deal with the same risks when navigating neighborhood streets, owners typically have a longer term interest in neighborhood character. Because of the permanent nature of heavy solutions, the input of property owners will be sought in determining consensus.

Single-family and Multi-family

Owners of single-family and multi-family homes both have an interest in safety and neighborhood character. Therefore both groups should have a voice in determining neighborhood consensus. However, these voices need to be balanced in proportion to the study area.

Recognizing that different homeowners will experience different levels of impact depending on the type of dwelling, each group of homeowners receives a portion of the vote proportional to the street frontage of the property type. As shown in the example on the following page, the combined representation of single-family home owners is 50 percent, because collectively their properties occupy 50 percent of the street frontage.

Large and Small Lot Single-family

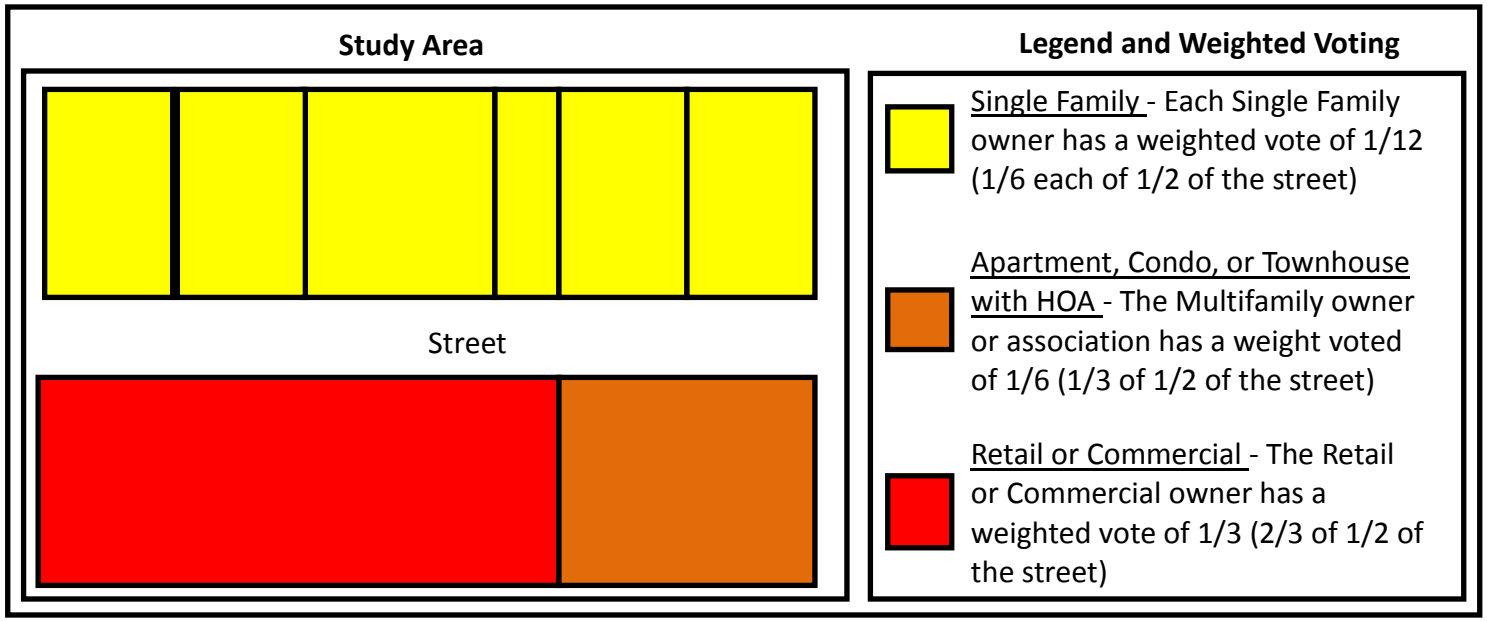
Within the set of single-family homes, each owner will experience approximately equal impacts. Therefore each single-family owner receives an equal voice in forming neighborhood consensus, irrespective of their lot size.

Representation of Multi-family

Multi-family residences already have recognized structures for making decisions, such as property management in the case of apartments, condo associations in the case of condominiums, and home owners associations (HOAs) in the case of some townhomes. It is not the place of the NTC Program to change these structures. Therefore, whenever multi-family housing is involved, including townhomes with HOAs, the existing decision-making body will be responsible for determining and communicating the interests of the residents(s) so covered.

Commercial and Retail Property

Like residential property owners, commercial and retail property owners also have an interest in the functioning of the neighborhood streets onto which they front. Therefore, they also need a say in forming neighborhood consensus. Consensus for commercial and retail properties will be determined in the same way it is for multi-family residential, with proportional representation voiced by the existing decision making authority.


Study Area
Street
Legend and Weighted Voting
Single Family - Each Single Family owner has a weighted vote of 1/12 (1/6 each of 1/2 of the street)
Apartment, Condo, or Townhouse with HOA - The Multifamily owner or association has a weight voted of 1/6 (1/3 of 1/2 of the street)
Retail or Commercial - The Retail or Commercial owner has a weighted vote of 1/3 (2/3 of 1/2 of the street)

Appendix D: Case Prioritization

Cases are prioritized based on the risk that pedestrians are exposed to and the likelihood of a pedestrian suffering a severe injury as a result of a crash with a motorist.

The case prioritization relies on measures of

- motor vehicle speed,
- motor vehicle volume,
- design deficiencies, and
- proximity to "pedestrian generators," such as schools, parks, transit stations, and commercial areas.

Automobile Speed

The sheer weight of automobiles combined with the speeds at which drivers can operate them have the potential to expose other street users to considerable danger. The risk of severe injury and death to pedestrians resulting from a crash increases dramatically as vehicle speed increases. The curve in Figure 7 captures the relationship between vehicle speed and risk of severe injury. Note that at vehicle speeds of 20 miles per hour (mph), the risk of severe injury is less than 15 percent. However, at 30 mph the risk of severe injury is approximately 40 percent.

Automobile Volume

Automobile speed is not the only factor to consider. Volume is also important, because more cars generally means more risk.

Chance of a Crash

As shown in the section on automobile speed, crashes at any speed can be extremely hazardous to pedestrians. However, it is important to bear in mind that crashes are rare events. Nationally, there are 24 crashes involving pedestrians for every 100 million vehicle miles traveled (VMT) (National Highway Traffic Safety Administration – NHTSA. 2008. National Pedestrian Crash Report). This is important to consider when assessing actual risks present.

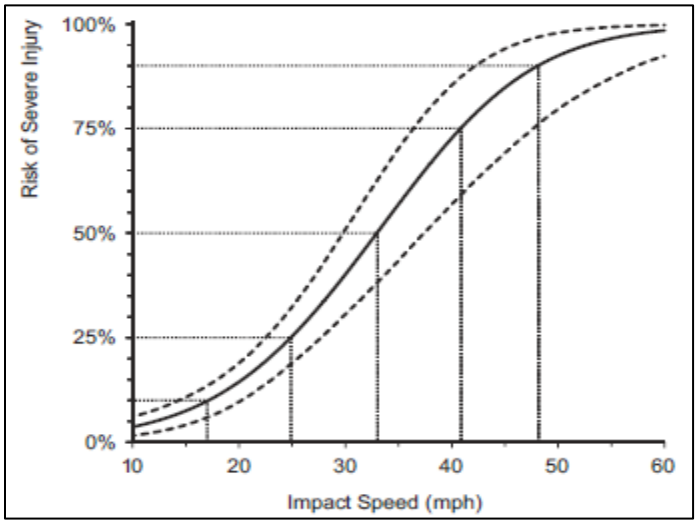


Figure 7: Risk of severe injury. Source: Tefft, Brian C. 2013. Impact speed and a pedestrian's risk of severe injury or death. Accident Analysis and Prevention. No 50. pp 871-878.

Estimating Pedestrian Risk

Understanding that the goal of the NTC Program is to provide for safe travel by multiple modes, cases will by prioritized to address those areas with the greatest pedestrian risk first. The risk is estimated using the following formula:

$$Daily\ Risk = VMT_{study\ area} \times Crash\ Rate_{National} \times Severe\ Injury\ Risk_{study\ area}$$

Where:

$$VMT_{study\ area} = Vehicles\ Miles\ Traveled$$
$$= Daily\ Volume\ \times Total\ Length\ of\ Street\ Segments$$

$$Crash\ Rate_{National} = Number\ of\ Pedestrian\ Crashes\ per\ VMT$$
$$= 24\ /\ 100{,}000{,}000\ VMT$$

$$Severe\ Injury\ Risk_{study\ area}$$
$$= chance\ of\ a\ pedestrian\ suffering\ a\ severe\ injury\ during\ a\ crash$$
$$= \sum_{5\ mph\ speed\ bins} Chance\ of\ Severe\ Injury\ \times Daily\ Volume$$

Risk Bins

The above formula will be used to sort cases into three bins or buckets, high priority, medium priority, and low priority. The purpose of sorting cases is to respond to neighborhoods in which pedestrians are exposed to the greatest risk first. Based on a review of historical data for neighborhood streets, the cut points for assigning cases to different bins are:

Priority	Daily Risk of Severe Pedestrian Injury
High	0.00010 ≤ Daily Risk
Medium	0.00001 ≤ Daily Risk < 0.00010
Low	Daily Risk < 0.00001

Additional Risk Factors

Cases will also be evaluated for risk factors not fully captured in the Daily Risk formula. These factors are (1) deficient design conditions and (2) proximity to "pedestrian generators". Deficient design conditions refer to elements of the street design that limit visibility, such as sharp turns. The presence of deficient conditions will be determined by City staff. Pedestrian generators are land uses that attract more pedestrian trips, such as schools, parks, commercial areas, and transit stations. Study areas will be considered proximate to a pedestrian generator if they are within 1/8 of a mile. Appendix F provides a map of pedestrian generators in the City and streets within 1/8 mile of them. Within their respective bins, cases that exhibit these risk factors will be prioritized.

Case Prioritization

After computing the daily risk score for each case and assessing the additional risk factors associated with each case, cases will be handled in the following priority order:

1. High Priority Cases, then
2. Medium Priority Cases, then
3. Low Priority Cases.

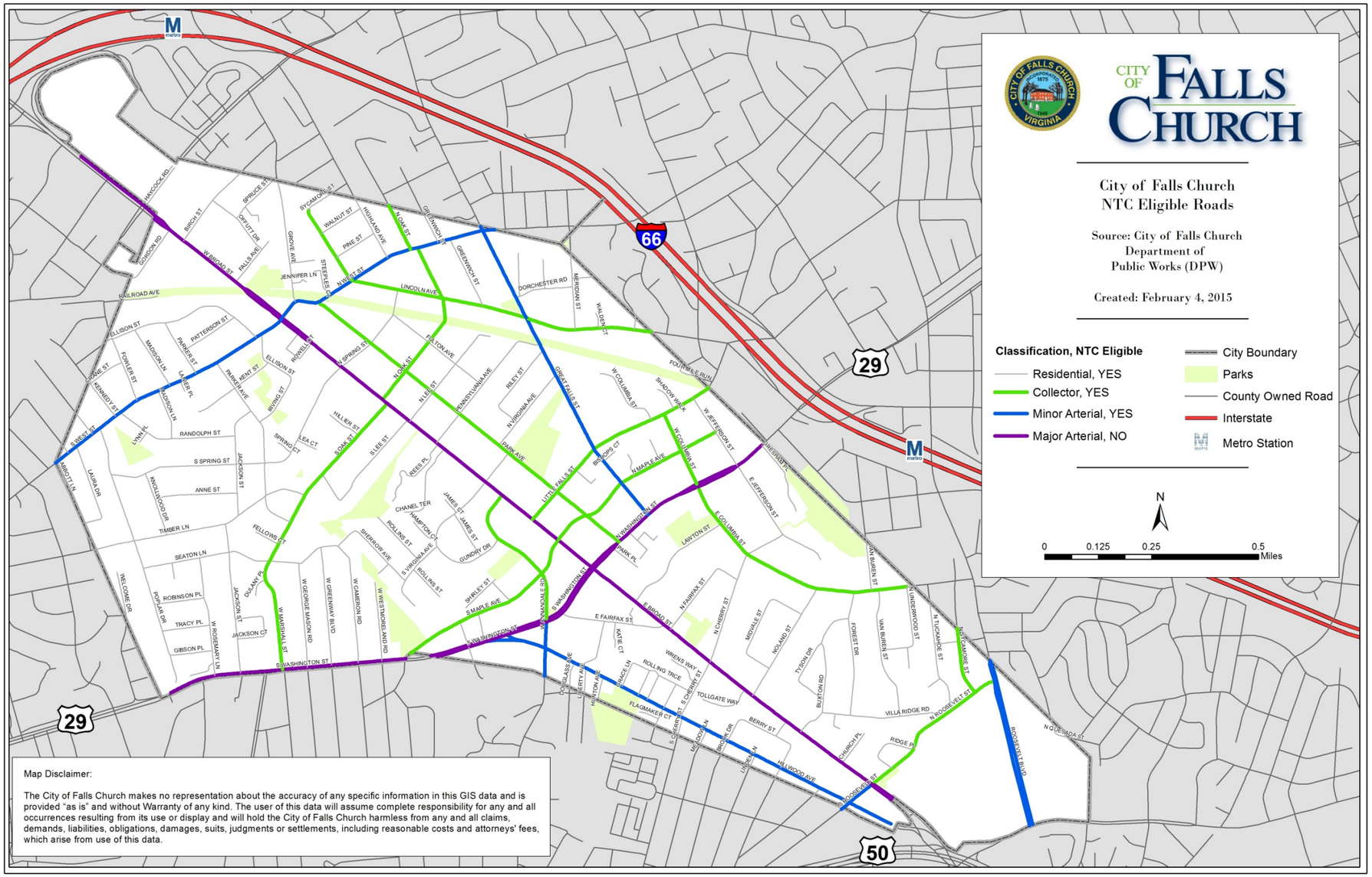
Among cases in the same priority bin, cases will be handled in the following order:

1. Cases exhibiting both deficient design conditions and proximity to a pedestrian generator, then
2. Cases exhibiting either deficient design conditions or proximity to a pedestrian generator (but not both), then
3. Cases with neither deficient design conditions nor proximity to a pedestrian generator.

If two or more cases fall into the same priority bin and exhibit the same number of additional risk factors, then the case with the highest daily risk score will be handled first.

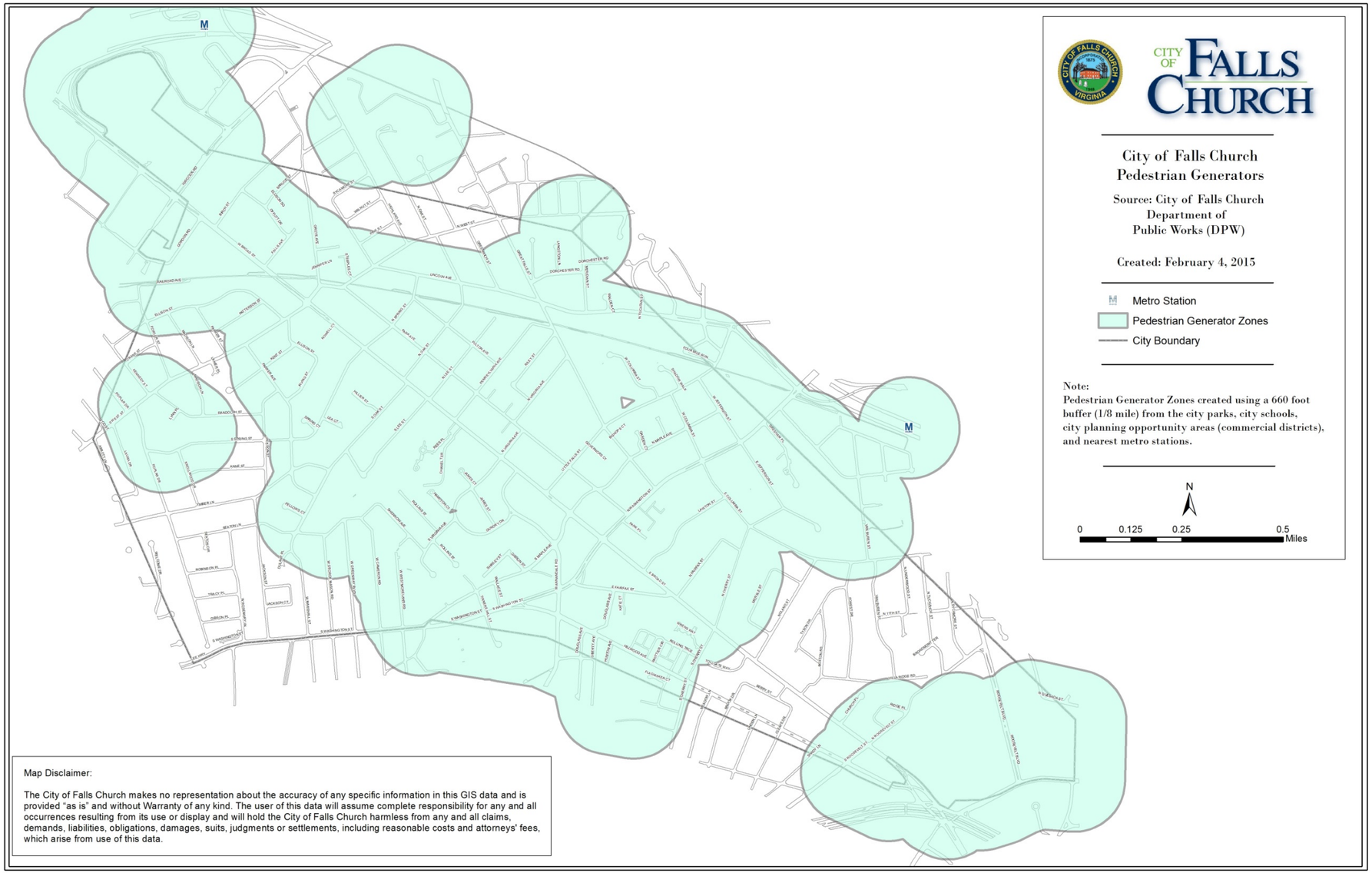
Appendix E: Eligible Street

Most streets in the City are predominantly residential in nature, though some of them have different classifications based on their vehicle volumes. The only two streets that are substantially non-residential are Washington Street and Broad Street. Therefore, all streets are eligible for review under the NTC Program except Broad Street and Washington Street.



Appendix F: Proximity to Pedestrian Generators

"Pedestrian Generators" are land uses that are more likely to generate pedestrian activity. These uses include schools, parks, commercial area, and transit stations. The map below shows areas that are within 1/8 of a mile of a pedestrian generator.



Appendix G: Traffic Calming Toolbox

Measure	Why it Works	Things to Consider	As a Light Solution	As a Heavy Solution	Eligibility
Access Restrictions and Diverters	Limiting truck access or restricting vehicular maneuvers reduces vehicle volume.	Reducing access on some streets may shift demand for travel to nearby streets. Access restrictions should be applied equitably.	Signage can be used to restrict truck access or to restrict direction of travel for all motor vehicles.	Intersection treatments can physically block entry or certain turning movements. **$$$***	Will only be considered in special circumstances.
Chicanes	Motorists typically drive faster on straight street segments. Chicanes require drivers to follow a meandering path.	Chicanes should not require overly sharp turns and should ensure adequate visibility.	Markings and/or shifting on-street parking from one side of the street to the other can create a visual chicane.	Concrete curbs with or without landscaping can create physical chicanes. **$$$**	Appropriate for most streets.
Gateways	Special treatments alert drivers that they are entering a residential area and send a signal that they should slow down.	Gateways should not interfere with visibility, which could inadvertently increase pedestrian risk.	Signage and paint could indicate a transition to a residential area.	Curb extensions, chokers, mini-roundabouts, and landscaping. **$$**	Appropriate for streets that provide direct access between a residential area and a different land use.
Narrowed Travel Lanes	Drivers typically drive slower when travel lanes are narrower.	Travel lanes should be kept to a minimum width of 10'.	Pavement marking or a lane of parked cars can visually narrow the road.	Reconstructed curbs for either the length of the block or small segments of it physically reduce lane width. **$$$**	Appropriate for most streets.
Pedestrian Crossing Treatments	Enhanced pedestrian crossings alert drivers to pedestrian activity by increasing visibility	Pedestrian crossings should be context-sensitive and include Americans with Disabilities Act (ADA) compliant ramps and landings.	N/A	Materials of special textures/colors, raised crosswalks, and pedestrian refuge islands within medians. **$$**	Appropriate for most streets.

Measure	Why it Works	Things to Consider	As a Light Solution	As a Heavy Solution	Eligibility
Redesigned Intersections	Reducing curb radii or introducing obstructions reduces motorists' speeds and increases visibility of all users.	Typical passenger cars should be able to turn without crossing into the opposing lane or striking the curb.	Paint can be used to stripe a smaller intersection.	Curb extensions and mini-roundabouts can be used to physically change intersections. **$$**	Appropriate for most streets.
Reduced Speed Limits	Motorists traveling at lower speeds have increased visibility and are less likely to be involved in a crash. Risk of injury resulting from a crash decreases as vehicle speed decreases.	Posting a sign with a lower speed limit will often not be sufficient to influence driver behavior. Drivers typically choose a speed based on the design of the road, not the signed speed limit.	Updated signage.	Updated signage paired with other traffic calming measures such as gateway features. **$$**	Requires engineering analysis and City Council approval.
Rumble Strips	The closely spaced strips make noise when vehicles are driven over them. As speed decreases, the noise decreases.	The increased noise that is heard by motorists is also heard by nearby households.	Pavement marking tape can be used to create rumble strips.	Additional asphalt, raised buttons, or grooves can be installed in the roadway. **$$**	Requires engineering analysis.
Speed Feedback Signs	Motorists typically slow down when flashing signs indicate they are driving above the speed limit.	The flashing lights of the signs can be considered a nuisance to some. Travel speeds typically increase once the motorist has passed the sign.	Solar-powered or electrical display sharing a post with a speed limit sign.	N/A	Appropriate for most streets.
Speed Humps, Speed Bumps and Speed Tables	Vertical changes in the street require motorists to slow down to avoid discomfort or possible vehicular damage.	Vertical speed control devices can interfere with emergency vehicle travel and their maintenance costs are typically high.	N/A	Speed humps, cushions and tables can be constructed in the roadway. **$$$**	Requires engineering analysis.

Relative administrative, installation, and maintenance cost is as follows: $ = Low (all Light Solutions); $$ = Medium and $$$ = High. In addition to costing more than Light Solutions, Heavy Solutions also require approval by 2/3 of the neighborhood.

Access Restrictions and Diverters

Figure 8:A traffic diverter in Vancouver, BC restricts through movements for motorists without impeding travel by other modes. Source: ouruptown.com.

Figure 9:A physical barrier at W Walnut St & King St in Alexandria, VA, prevents motor vehicle access at all times. Source: Google Maps.

Chicanes

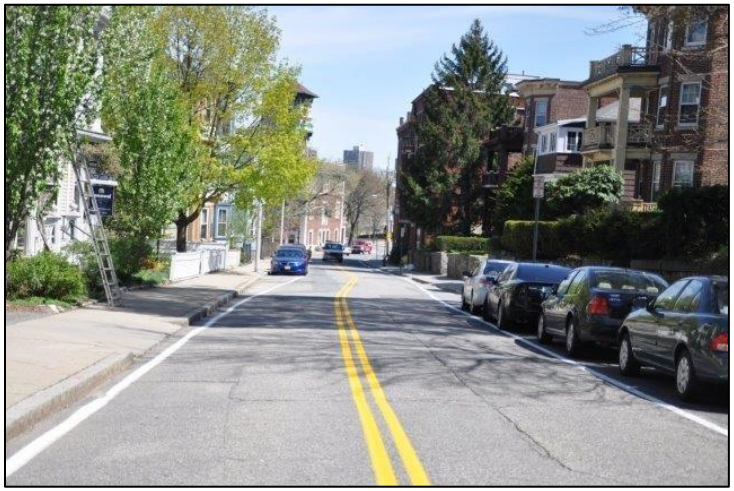


Figure 10: Alternating on-street parking on Walnut St in Boston, MA, creates a chicane. Source: Li, Zhi (Jeff). Calm Streets Boston.

Figure 11: Concrete planter beds create a chicane in Austin, TX. Source: LADOT Bike Blog. Anatomy of a Bicycle Friendly Street: Chicanes.

Gateways

Figure 12: Landscaped medians and textured pavement provide a gateway for Beaverton, OR. Source: www.beavertonoregon.gov

Figure 13: The village of Golspie in Sutherland gateway signage both welcomes and encourages motorists to be cautious. Source: "Maintaining standards – A public report on trunk road maintenance in 2004/05." The Scottish Government.

Narrowed Travel Lanes

Figure 14: Restriping in St. Louis, MO to include a buffer for cyclists narrowed the travel lanes to 10'. Source: Matthew Wyczalkowski, "SafeTGA Meeting: A Report."

Figure 15: A choker visually and physically narrows the roadway in Richmond, VA. Source: Richmond Department of Public Works – Transportation Engineering Division.

Pedestrian Crossing Treatments

Figure 16: N Highland St in Arlington, VA uses a raised crosswalk to slow motorists and highlight pedestrians. Source: Google Maps.

Figure 17: Pedestrians can wait in an angled pedestrian refuge in Bainbridge, WA. Source: Landis, Bruce. FHWA Safety Program.

Redesigned Intersections

Figure 18: A mini-roundabout in Dublin, OH informs motorists to keep right. Source: Bowden, Heather.

Figure 19: Crossing distances were shortened when Chapala and De La Guerra received curb extensions in Santa Barbara, CA. Source: Coalition for Sustainable Transportation.

Reduced Speed Limits

Figure 20: New York City created a "slow zone" on Broadway using signage. Source: newyork.cbslocal.com

Speed Feedback Signs

Figure 21: E Broad St has residential speed limit signs and an electronic speed feedback sign along both directions within the City of Falls Church. Source: Google Maps.

Rumble Strips

Figure 22: Rumble strips before Memorial Circle in Washington, DC help alert motorists that it may be necessary to lower their travel speed before encountering pedestrians or curves in the road. Source: www.thewashcycle.com

Figure 23: Deep grooves in the pavement, such as these in Sarnia, Ontario, create louder sounds than most rumble strips. Source: BlackburnNews.com

Speed Humps, Speed Bumps and Speed Tables

Figure 24: Speed tables have more gradual slopes than speed bumps or humps and was the preferred traffic calming measure for the City of Fort Worth, TX. Source: National Association of City Transportation Officials (NACTO).

Figure 25: Speed humps made with rubber in high-visibility colors have been tested in Northampton, MA. Source: www.northamptonma.gov

Appendix H: Public Engagement

This Program was developed with extensive collaboration between City staff and the Citizens Advisory Committee on Transportation (CACT). Programs updates and draft materials were regularly updated on the project webage: http://www.fallschurchva.gov/ntc. The Program update was discussed at the following public meetings:

Date	Meeting
June 11, 2014	CACT
July 7, 2014	City Council work session
July 9, 2014	CACT
August 13, 2014	CACT
September 10, 2014	CACT
October 8, 2014	CACT
October 20, 2014	City Council work session
November 12, 2014	CACT
December 10, 2014	CACT
January 14, 2015	CACT
February 11, 2015	CACT
February 17, 2015	City Council work session
February 23, 2015	City Council meeting

CACT Recommendation

The CACT passed the following motion unanimously (6-0) on February 11, 2015 in support of Program adoption.

WHEREAS: The City's existing Neighborhood Traffic Calming (NTC) Program requires several procedural and substantive updates to effectively respond to the growing number of requests for neighborhood traffic calming; and

WHEREAS: The City's Mobility for all Modes Plan, the Transportation Chapter of the City's Comprehensive Plan, explicitly calls for an update to the City's existing NTC Program to better address the needs and desires of the community; and

WHEREAS: The draft Program update was developed through extensive engagement, including two work sessions with City Council, one work session with the Planning Commission, and nine work sessions with the Citizens Advisory Committee on Transportation (CACT), all of which were advertised and open to public; and

WHEREAS: Progress on the draft Program was regularly made available on the project website; and

WHEREAS: the draft updated Program was developed through an extensive review of best practices and addresses the identified issues with the existing Program.

NOW, THEREFORE, BE IT RESOLVED that the CACT of the City of Falls Church, Virginia recommends City Council adopt the updated NTC Program, titled "Neighborhood Traffic Calming: Responding to Neighborhoods" as a replacement to the City's existing Neighborhood Traffic Calming Program, last revised in November 2011.

Council Adoption by Resolution

The City Council passed the following motion unanimously (7-0) on March 23, 2015 adopting this Program.

WHEREAS, The City has a strong desire to provide shared, safe access on neighborhood streets for pedestrian, bicyclists, transit users, and motorists; and

WHEREAS, The updated Neighborhood Traffic Calming Program was developed with substantial public engagement, addresses identified issues with the existing Program, and was developed using industry best practices.

NOW, THEREFORE, BE IT RESOLVED by the City Council of the City of Falls Church, Virginia that the updated Neighborhood Traffic Calming Program, titled "Neighborhood Traffic Calming: Responding to Neighborhoods," Attachment 1 to this report, is hereby approved as a replacement to the City's existing Neighborhood Traffic Calming Program, revised in November 2011.

The City of Falls Church is committed to the letter and spirit of the Americans with Disabilities Act. To request a reasonable accommodation for any type of disability, call 703-248-5027 (TTY 711). For more information call 703-248-5178.