

D.C. SPEED STUDY

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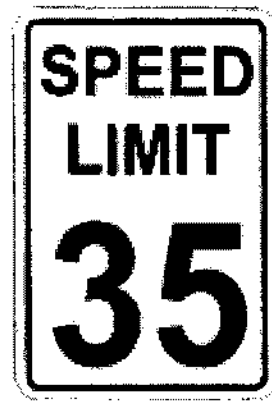
August, 2006



or



or



**Government of the District of Columbia
D.C. Department of Transportation**

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1. Introduction

1.1 Overview

By definition, speed is the rate at which someone or something moves or operates. In the transportation industry vehicular speed is one of the most important elements that is considered by motorists in selecting a highway, route or transportation mode. The ability to move efficiently, safely and reasonably along a highway corridor is a fundamental factor in the movement of good and services.

Reasonable people want to get where they are going as quickly and safely as possible. They do not want to injure themselves, nor do they want to injure anyone else. Consequently, reasonable drivers will select a speed with which they are comfortable, neither too slow nor too fast, as they travel about the District of Columbia (D.C.). The travel speed that they select will get them where they want to go safely and without undue delay, and it will be based upon an instinctive consideration of the conditions that they encounter, such as, other traffic, the type of roadway that they are traveling, weather, and the presence of hills and curves. For example, a driver of a car may consider the physical characteristics of a highway in the decision of vehicular speed, while a truck driver may rely on prevailing speeds to determine their operating speed.

The regulation of speeds along highways and routes has been in existence in the United States since the invention of motor vehicles and the advent of paved highways. Every state regulates speeds under some form of basic speed statutes that require drivers to operate their vehicles at a speed that is reasonable and prudent under existing conditions. The motorist is responsible for selecting their speed with due regard to actual and potential hazards, visibility, weather, traffic roadway width and other conditions.

Established speed limits are posted to inform motorists of the speed which is considered safe and reasonable for a majority of drivers on a particular route. Motorists, especially those unfamiliar with the road, use this information to evaluate how they should drive the route. Speed limits are not intended to force reasonable motorists to speeds that they consider unreasonable, nor should they be posted beyond the limits of acceptability for violation of traffic regulations.

1.2 Purpose of Report

Officials of the Government of the District of Columbia, Department of Transportation, indicated that highway speeds along the D.C. roadways were last evaluated in the 1960s. Since that time, advances in the motor vehicle industry have improved vehicular safety, while transportation engineering research has led to a better understanding of the relationship of observed speeds to driver behaviour, roadway design, accident characteristics and traffic flow.

Brudis & Associates, Inc. (BAI) was retained by the District of Columbia, Department of Transportation, to collect, tabulate, and present data to assist the District of Columbia in the review of their posted speed limits for all interstate, freeway/expressway and principal arterials. Therefore, the specific objective of this study was to examine the existing highway speed postings along selected Washington D.C. routes, collect appropriate data and present it to the District Department of Transportation as the basis for a systematic review of speed limits.



During the study BAI examined existing roadway characteristics from field data and research, pedestrian and safety features, collected travel speeds and established median and 85th percentile speeds (and accuracy levels), and consolidated the highway and traffic data for analysis of vehicular speeds.

2. Speed Laws

2.1 Introduction to Speed Laws

All states, including the District of Columbia, formulate their speed regulations on the basis of some form of the basic speed law. This law specifies that a driver shall operate a vehicle at a speed that is reasonable and prudent for existing conditions, regardless of any other speed limit that may be applicable at a location at any given time. A driver is responsible for taking both actual and potential hazards into consideration when selecting a speed and for giving due regard to weather, visibility, traffic, roadway width, and condition.

Most states enact “statutory” or “blanket” maximum (or minimum) speed limits for various roadway classes and land uses in their jurisdiction, such as urban residential streets, urban business districts, rural and urban arterials, and rural and urban freeways. In some jurisdictions, separate daytime and night-time limits may also be imposed. These limits are in effect unless a “speed zone” is established and posted using appropriate signs. The term “speed zone” is defined as a section of roadway with a speed limit that is established by law but which might be different from a legislatively specified statutory speed limit. Generally, specific wording and limits imposed through these statutory regulations varies considerably from state to state.

Two basic types of numerical maximum speed limits exist in the United States: *absolute* and *prima facie*. An *absolute* speed limit is a limit above which it is unlawful to drive regardless of roadway conditions, amount of traffic, or other influencing factors. A *prima facie* speed limit is a limit above which drivers are presumed to be driving unlawfully. If charged with a violation of this limit, drivers may contend that their speed was safe for conditions existing on the roadway at that time and that they are not guilty of a speed limit violation. However, the burden of proof is on the driver to establish that a speed higher than the *prima facie* limit was indeed reasonable and prudent. Approximately two-thirds of states have *absolute* speed limits and one-third have *prima facie* limits or a combination thereof. In general, *absolute* limits are perceived to be easier to enforce and obtain a conviction from than *prima facie* limits.

2.2 District of Columbia Speed Laws

The D.C. Vehicle Law provisions on speed limits are based on the thought that the behavior of drivers is reasonable. The speed law is written to single out the unreasonable behavior of a minority of the drivers. The law is written so that reasonable actions of the majority are considered legal. The following summarizes the District of Columbia statutes and regulations related to speed, D.C. Code and Weil’s Code of D.C. Municipal Regulations (CDDR).



Basis for Speed Law Violation:

Basic Speed Rule:	No person shall drive a vehicle at a speed greater than is reasonable and prudent under the conditions and having regard to the actual and potential hazards then existing. D.C. Code §§40-703(a)(6) & 40-712(a) and CDCR 18-22-2200.3
Statutory Speed Limit:	25 MPH D.C. Code §§40-703(a)(6) & 40-712(a) and CDCR 18-22-2200.6 15 MPH in alleys D.C. Code §§40-703(a)(6) & 40-712(a) and CDCR 18-22-2200.7 15 MPH in streets adjacent to school buildings or playgrounds when indicated by official signs D.C. Code §§40-703(a) & 40-712(a) and CDCR 18-22-2200.8 & 18-22-2200.9
Posted (Maximum) Speed Limit:	Based upon engineering and traffic investigations, the statutory speed limits may be increased or decreased on any highway. D.C. Code §§40-703(a) & 40-712(a) and CDCR 18-22-2200.2 Note: D.C. law does not specifically state whether different highway speed limits may be established either for different types of vehicles, for various weather conditions or for different times of the day.

2.3 Speed Zones

Most states permit local officials to modify statutory limits. For example, the National Uniform Vehicle Code contains the following provision:

Whenever the (State Highway Commission) shall determine upon the basis of an engineering and traffic investigation that any maximum speed herein before set forth is greater or less than is reasonable or safe under the conditions found to exist at any intersection or other place or upon any part of the (State) highway system, said (Commission) may determine and declare a reasonable and safe maximum limit thereat, which shall be effective when appropriate signs giving notice thereof are erected.

The determination and establishment of a safe and reasonable speed limit, usually on the basis of a traffic engineering investigation, is termed speed zoning. A properly established speed zone modifies the basic speed limits set by law or ordinance.



There are two basic types of speed zones: (1) those established by regulatory speed limits that are enforceable (as *absolute* or *prima facie* limits), and (2) advisory maximum speed indications that are not enforceable but that advise (e.g. curves or ramps) or warn motorists of suggested safe speeds for specific conditions at a specific location (however, some court jurisdictions may use a posted advisory speed as evidence that a driver was "driving too fast for conditions" or is guilty of a similar violation).

3. Speed Limits

3.1 Technical Reference

There are numerous National Reference publications which all State Highway officials and other governmental agencies utilize in the assistance of setting speed limits for roadways within their jurisdiction. Those references which have been reviewed as part of this study include the following:

- *A Policy on Geometric Design of Highway and Streets, 2004-5th Edition; prepared by the American Association of State Highway and Transportation Officials (AASHTO)*
- *Traffic Engineering, 1998-2nd Edition; written by Roess, McShane and Prassas*
- *Manual on Uniform Traffic Control Devices (MUTCD), 2003 Edition; approved by Federal Highway Administrator*
- *Traffic Engineering Handbook, 1999-5th Edition; prepared by Institute of Transportation Engineers (ITE)*

In addition to the traditional reference manuals listed above, the following publication was examined for its influence and impact on the goals of this study:

- *District of Columbia Statutes and Regulations, as related to speed*

The following are additional publications, which also were reviewed as part of this technical research:

- *"Speed Limit? Here's Your Answer" Mn/DOT Office of Traffic, Security and Operations; September, 1998*
 - *"Setting Speed Limits on Local Roads" Wisconsin Transportation Information Center; 1999*
 - *"Effects of Raising and Lowering Speed Limits", FHWA-RD-92-084, October, 1992*
 - *"Speed Management Program in FHWA and NHTSA", ITE Journal Article, July, 1988*
- *"Establishing Speed Limits – A Case of 'Majority Rule'", Arizona DOT, Intermodal Transportation Division*
 - *"ITE Speed Zoning Guidelines", ITE Committee 4M-25 Speed Zone Guidelines, Final Draft Version*



3.2 Regulatory Speed Zones

Speed zones should be established on the basis of proper engineering and traffic data. Many states have adopted specific procedures for conducting a speed zone study of roadway segments involving regulatory speed limits. Generally, these procedures involve a determination of some or all of the following:

- prevailing vehicle speeds,
- physical features of the roadway,
- traffic control characteristics,
- crash experience, and
- conditions not readily apparent to the driver.

Typically, prevailing speeds are the primary determinant of the speed zone, with adjustments applied as judged appropriate for the remaining factors. Although different methods for estimating prevailing speeds can be used, spot speed studies performed at periodic locations along the roadway are the most common method. Spot speed studies can be conducted with the use of radar units, manual speed traps, or videotaping.

The Manual on Uniform Traffic Control Devices (MUTCD) indicates that the traffic and engineering investigation for a speed zone should consider the following:

- road surface characteristics, shoulder condition, grade, alignment, and sight distance;
- the 85th percentile speed and/or pace speed;
- roadside development and culture as well as roadside friction;
- safe speed for curve or hazardous locations within the zone;
- parking practices and pedestrian activity; and
- reported crash experience for a recent 12-month period.

The primary measure computed from spot speed data for establishing speed zones is the 85th percentile speed of "free-floating" traffic. The 85th percentile speed is that speed at which 85 percent of free-flowing vehicles are traveling at or below. Use of the 85th percentile speed is based on the theory that the large majority of drivers are reasonable and prudent, do not want to be involved in a crash, and desire to reach their destination in the shortest time possible. On very low-volume roadways where it is difficult to obtain an adequate speed sample for a spot speed study, trial speed runs over the roadway section are sometimes used.

The speed limit is then generally set at the nearest 5-mph increment at or below the 85th percentile speed. The pace is the 10-mph speed range representing the speeds of the largest percentage of vehicles. The upper limit of this pace is also a good indicator of an appropriate maximum speed limit.

Traffic control features should be identified as part of the speed zoning procedure. Control features include:

- crosswalks,
- traffic signals,
- parking characteristics/restrictions, and
- turning restrictions.



Accident or crash histories for a recent 12-month period should be obtained and may be a factor considered in setting the speed zone. A speed zone survey sheet or zone area map, should be prepared to document the above data. In certain cases, an agency may choose, on the basis of one or more of these data, to post a speed limit that is slightly lower than the 85th percentile. For example, a relatively high number of crashes in which excessive speed was judged to be a causal factor may indicate that motorists' speeds are not realistic for that roadway segment, and therefore that a value below the 85th percentile speed would be appropriate. However, setting such a value will result in a large number of motorists exceeding the speed limit at that location. A significant amount of enforcement will be needed at that location to obtain motorist compliance.

Several studies have demonstrated that drivers who travel either slower or faster than the 85th percentile speed of the traffic stream have a higher accident involvement rate than those drivers whose speed is close to the 85th percentile speed. Posting the speed limit at the 85th percentile speed informs the motorist of the speed which is expected to minimize their risk of an accident. Thus, the overriding basis (from a safety perspective) for speed zoning should be that the creation of the zone, and the speed limit posted, reflects the maximum speed considered to be safe and reasonable (i.e., the 85th percentile speed).

Another rationale for consistency in speed zoning practice is the desire for equitable treatment of motorists. When speed limits are set artificially low, and enforcement action cannot be directed at all the violators, the enforcement officer has too much discretion in selecting the motorists to be penalized. The cost of being selected can include both a fine and an increase in the cost of insurance. This type of enforcement ultimately leads to poor public relations for both the traffic engineering agency and the enforcement agency.

Finally, there is a need for consistency between the speed limit and other traffic control devices. Signal timing and sight distance requirements, for example, must be based on the prevailing speed of traffic. If these values are based on a speed limit that does not reflect the prevailing speed of traffic, safety may be compromised.

If speed zones are to fulfill their intended function as a traffic control device used to enhance highway safety and operations, these inconsistencies must be eliminated. As currently practiced, speed zoning violates the basic traffic engineering premises stated in the national *Manual of Uniform Traffic Control Devices* "uniformity means treating similar situations in the same way. The use of a standard device does not, in itself, constitute uniformity. A standard device used where it is not appropriate is as objectionable as a nonstandard device . . ."



4. Technical Methodology

4.1 Identification

A speed zone is defined as a section of roadway for which a speed limit has been determined to be appropriate (based upon a traffic engineering study) that is different from the statutory speed limit value specified in the D.C. law (25 mph for roads, 15 mph for alleys). A speed zone most often involves a speed limit which is more than the statutory speed limit; however, a decrease in value to a smaller limit is permitted based upon proper studies.

Speed zoning is generally reserved for major thoroughfares carrying appreciable volumes of traffic, areas of high accident frequency attributable to speed-related situations and areas of unusual enforcement problems. The D.C. Law requirements support this approach to speed zoning. It is the intent of the D.C. law that physical conditions, such as width, curvature, grade and surface conditions do not require special downward speed zoning (reduced speed limits).

A speed limit is established to guide drivers along a certain route. If the limit is too high, the dangerous driver is unchecked in his pursuit of speed – to the detriment of general safety and comfort. If the limit is too low, drivers will ignore it, and the value of the posted speed limit as a guide to safe travel will be undermined. Only with realistic speed zoning can the demands of safety, speed and comfort enter into a working balance. This balance may, in fact, be the only safe one because safety depends less on any absolute speed than on the uniform observance of reasonable regulations.

Realistic speed limits also make effective enforcement possible. If posted limits coincide with the observation and judgment of the majority of drivers, they tend to be observed voluntarily. As a result of this voluntary observance, enforcement programs can be directed toward the reckless, the irresponsible, and the negligent or accident-prone driver. On the other hand, if the limits are unrealistic, enforcement becomes indiscriminate.

A rationale for proper speed zoning can be summarized as follows:

- 1. Motorists govern their speed more by traffic and roadway conditions than by indicated speed regulations. The majority of motorists will select a speed based on roadway and traffic conditions which is reasonable and safe for them. Thus indicated speed limits which are obviously higher or lower than those called for by roadway and traffic conditions will be ignored by the majority of motorists.*
- 2. Speed limits, to be effective, must be enforceable. This means that a speed limit must be such that a majority of motorists will observe it voluntarily and enforcement can be directed to the minority.*
- 3. Any speed limit is reasonable only for the roadway and traffic conditions for which it was set. Since this is generally for fair weather and off-peak volumes, it may seem unreasonably high for extreme weather and traffic conditions.*
- 4. Speed limits based on studies of the prevailing speeds, the character of the road, the extent and character of development along the margins of the roadway tend to reduce the spread in speeds, from the highest to the lowest, and thereby result in a smoother traffic flow. This smoother flow results in a reduction of accidents.*



5. *Accidents are not related as much to speed (measured by average speed or the speeds at or below which some percentage of the vehicles travel) as to the spread in speeds from the highest to the lowest. In other words, accidents more often result from the differences in speeds rather than from speed alone.*

4.2 Engineering Principals

The procedures used to determine safe speed limits are the result of years of engineering research and experience of traffic and highway engineers. Accordingly, nationally accepted engineering principals have been established to provide a consistent basis for the determination of speed zones. These principals and practices include:

1. Speed zones shall only be established on the basis of an engineering study. Each speed zone should be periodically restudied to determine that the established speed limit is appropriate. The suggested maximum interval for re-study is five years. In addition, an engineering study should be conducted whenever there is a change in the roadway that would affect the prevailing speed. Such changes would include elimination of parking, added lanes, signal coordination, changes in roadside development, etc.
2. The engineering study should include an analysis of the current speed distribution of free-flowing vehicles. The speed limit within a speed zone shall be set at the nearest 5 mph increment to the 85th percentile speed. No speed zone shall be established in a location where the 85th percentile speed is within +/- 3 mph of the statutory speed limit. The existing speed limit within a speed zone shall not be changed if the 85th percentile speed is within +/- 3 mph of the posted speed limit.
3. The engineering study may include other factors such as:
 - Geometric features including: vertical and horizontal alignment, and sight distance;
 - Roadside development;
 - Road and shoulder surface characteristics;
 - Pedestrian and bicycle activity;
 - Speed limits on adjoining highway segments;
 - Traffic control characteristics;
 - Accident experience or potential.
4. Speed zones should not be used to warn motorists of hazardous conditions. If a hazardous condition exists within the road segment under study, this condition should be corrected or an appropriate warning sign in conjunction with an advisory speed plate should be posted.
5. Enforcement of speed limits within speed zones should be uniform. Efforts should be made to coordinate the implementation of speed zones and the enforcement policies within the governing enforcement agency.



4.3 Engineering Applications

In order to examine the speeds along D.C. highways, Brudis & Associates, Inc. performed a visual field investigation of all the interstate, freeway and expressway, principle arterials, and minor arterials, as determined by the District Department of Transportation. (Refer to Figure 1 - Road Classification Map). In total, BAI examined approximately 325 road miles and more than 150 routes within the District of Columbia. The analysis, which was also compiled in an electronic database, was collected during the months of August, 2005 to July, 2006.

The field data collected by BAI, involved a "windshield survey" and overall general observation and condition assessment of the physical features of each roadway segment, which included: route name, begin location, end location, posted speed limit (mph), comfort speed (mph), vertical and horizontal curves (advisory), pavement conditions, thru and turn lanes, pedestrian activity, parking, roadside development/culture, speed zones (school, work), and length of segment. The field data was summarized per roadway segment.

The collection of roadway and speed data by BAI involved multiple field crews of two personnel (traffic engineer and technician). For uniformity and evaluation of the study, the data collected involved the following criteria:

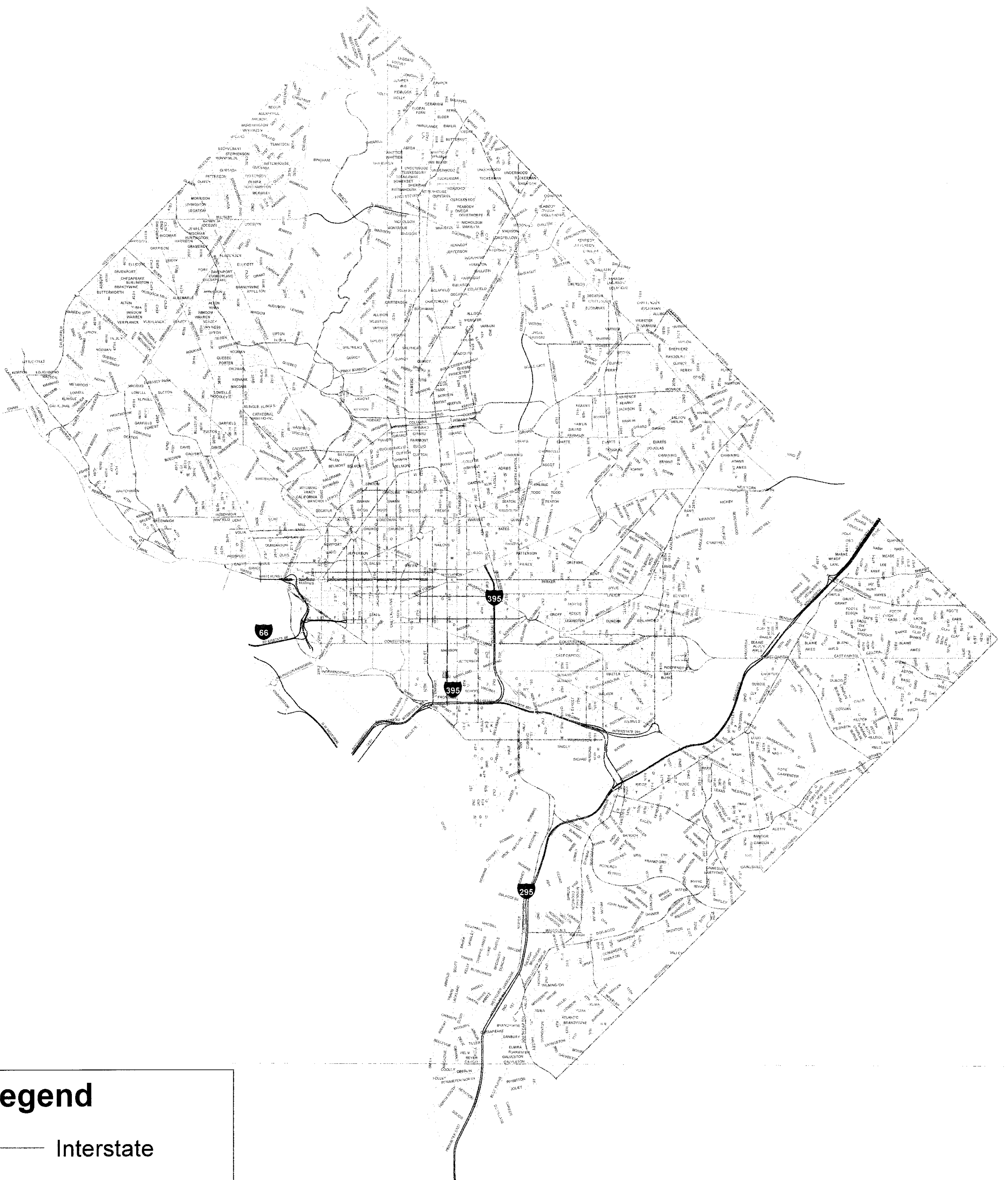
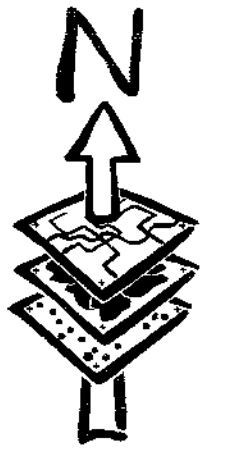
- ✓ No studies were conducted when the weather or non-typical conditions influenced prevailing speeds;
- ✓ Data for trucks, buses, and motorcycles was not collected;
- ✓ Traffic data was collected during weekdays only (Monday to Friday);
- ✓ All traffic data was collected during non-peak hour traffic (i.e. 9 AM to 3 PM);
- ✓ Traffic data was gathered during congestion free traffic flow;
- ✓ Emergency operating vehicles (i.e. police, fire, etc.) were not collected;
- ✓ The study was aborted if any traffic or pedestrian incident occurred.

In monitoring of vehicle speeds, typically 100 vehicles were sampled unless the time of study exceeded one (1) hour. At some freeway and expressway locations, BAI obtained a sample of 150 vehicles, while at some low volume locations 75 speed measurements were collected. The speed of the vehicles was determined using Bushnell Velocity Speed Guns (radar gun 10-1911), which use digital technology and digital signal processing to provide accurate (± 1 mph) real time measurements. The instruments were examined and verified for speed accuracy every 30-day use period, by BAI.

Radar guns operate on the principle that a radio wave reflected from a moving target has its frequency changed in proportion to the speed of the target (Doppler Effect). The radar gun is a transmitter-receiver sending a cone of radio waves over a wide range of distances. Radar guns evaluate the difference between transmitted and received frequencies and express the result in miles per hour. They are commercially available from several manufacturers.

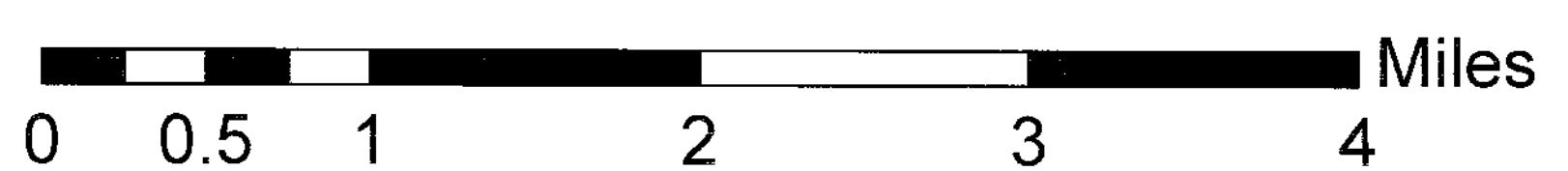
When taking the field measurements, BAI's field teams recorded vehicle speeds at an angle less than 10° , to avoid the "cosine effect". In general terms, a radar gun measures the relative speed of a vehicle as it approaches the gun. If the vehicle is in direct line (collision course) with the gun the measured speed will be exact. As the angle of incidence increases, the accuracy can decrease (cosine effect) marginally, because the measured speed is directly related to the cosine of the angle between the gun and the vehicle's direction of travel.

FUNCTIONAL CLASSIFICATION MAP



Legend

- Interstate
- Freeway
- - - Principal Arterial
- Minor Arterial
- · · Collector
- · · Local





Unless it was determined that because of some geometric feature, roadway element or change in site characteristic, vehicle speeds were principally sampled in one direction of travel. In most instances the posted highway speed was the same for both directions of travel. Therefore, the collection of vehicle speeds was gathered for one direction of travel. If the posted speeds differed by direction or it was determined by BAI, that a change in highway conditions may have an impact on driver operation (per direction), supplemental speed measurements were collected.

BAI's field teams were dressed in typical "street" attire to avoid detection and driver attempts to regulate speeds. In most instances the field personnel also located themselves in an inconspicuous location downstream from the flow of traffic. A digital photo was taken of the cross-section of the data area that was collected. School zones and work/traffic control areas were not used for speed measurement.

In addition, since D.C. currently uses technology to monitor and enforce vehicle speeds, BAI avoided known speed zones where speed cameras were in operation. Furthermore, no speed camera data was collected or correlated with BAI's investigations, as part of this report. Some of the roadway features were gathered from dDOT resources, which included D.C. vehicle speed laws, traffic volumes and accident data, etc.

A brief description of each of the roadway features compiled included:

a. Route Name (Begin/End Study Location)

The route terminal beginning and ending points for BAI's evaluation. Generally these points were determined by some physical roadway condition change, road classification, highway indicator and/or intersecting roadway. Typically these may have included selected horizontal and/or vertical alignment changes, school or work zones, pavement conditions or widths, traffic signals or pedestrian activity. The roadway segments lengths were also limited to a maximum length of approximately two miles to provide adequate interpretation of data, including speed measurements.

b. Quadrant and Wards

The District of Columbia is divided into four quadrants of a compass (NW, NE, SE and SW), with the U.S. Capitol at the center. The wards represent jurisdictional boundaries of the Council of the District of Columbia. There are eight (8) wards in the District of Columbia

c. Length Approximate (miles)

The length in miles (to the nearest 0.1 miles) for each highway segment.

d. Road Classification

The classification definition (*Geometric Design of Highways and Streets*, AASHTO, 2004) for each type of road maintained by the District Department of Transportation was utilized. All road classifications were provided from the Functional Classification Map dated February 5, 2003, as provided by the dDOT. This included:

Interstate: The Interstate system is defined as any route labeled as such by the Federal Government (e.g., Interstate 495).



Freeway/Expressway: The Freeway/Expressway system is defined by all principal arterials that are fully and partially controlled access facilities and carry most of the trips entering and leaving the urban areas, as well as most of the through movements bypassing the central business districts.

Principal Arterial: The principal arterial system consisted of a network of routes with the following service characteristics:

- Corridor movement with trip length and density suitable for substantial D.C. travel.
- Movements between all, or virtually all, urban areas with populations over 50,000 and a large majority of those with populations over 25,000.
- Integrated movement without stub connections except where unusual geographic or traffic flow conditions dictate otherwise (e.g., connections to coastal cities).

Minor Arterial: The minor arterial road system, in conjunction with the principal arterial system, forms a network with the following service characteristics:

- Linkage of neighborhoods and other traffic generators (such as stadiums and arenas) which are capable of attracting travel over similarly long distances.
- Integrated interstate and inter-ward service.
- Internal spacing consistent with population density, so that all developed areas of the District are with reasonable distances of arterial highways.
- Corridor movements consistent with items (1) through (3) with trip lengths and travel densities greater than those predominantly served by rural collector or local systems.

Collector: The collector routes generally serves travel of primarily wards rather than District importance and constitute those routes on which (regardless of traffic volume) predominant travel distances are shorter than on arterial routes. Consequently, more moderate speeds may be typical.

Local: The local road system, in comparison to collectors and arterial systems, primarily provides access to land adjacent to the collector network and serves travel over relatively short distances. The local road system constitutes all rural roads not classified as principal arterials, minor arterials, or collector roads. *Note: While these roads are classified by the District Department of Transportation, the collector and local roadways were not included as part of this Speed Study.*

e. *Posted Speed Limit (mph)*

All posted speed limits on roadways evaluated by BAI were recorded. Roadway routes which had damaged signs or appeared to be missing from a specific location were identified to dDOT officials, as appropriate.

f. *Median Speed (mph)*

The median speed (50th percentile) was determined by numerically organizing the total number of speed values recorded for the roadway segment (usually 100), and locating the number in the middle. This is also referred to as the 50th percentile, since the number represents the speed that numerically is the middle.



g. Comfort Speed (mph)

A comfort speed was established, at which the BAI driver felt a comfortable safe speed (lowest 5 mph increment). The comfort speed was selected by the driver after several drive runs through the roadway segment, as appropriate. This method of arriving at a comfortable safe speed was used during the 1930s, when blind-folded passengers were driven through roadways and resulted in the selection of comfortable maximum safe speeds.

h. 85th Percentile Speed (mph)

The 85th percentile speed was determined from the whole-number speed in which the percentage of drivers that do not exceed that speed is most nearly 85%. A majority of the time, one-hundred (100) speed measurements were obtained at each study location. This sample size was selected to ensure that the average and 85th percentile speeds were estimated to within +/- 1.0 mph with a 95% level of confidence. For normally distributed data, the precision of the estimate is related through the following equation:

$$e = t_{\alpha/2} \frac{s}{\sqrt{n}}$$

where n is sample size, $t_{\alpha/2}$ is 1.987 for $(1 - \alpha) = 95\%$, s is the standard deviation of the sample, and e is the tolerance (1.0 mph). This equation was solved for e, and the s value for each study location was substituted in the equation to ensure the tolerance was less than 1.0 for each data set. Due to the precision of the radar gun (+/- 1.0 mph), tolerances of less than 1.0 do not have a statistical significance, and therefore, smaller tolerances can not be obtained with the available equipment.

For the few freeway and expressway project locations, one-hundred fifty (150) speed measurements were obtained. Due to the greater variance in data at these locations (i.e. higher standard deviation), larger sample sizes were obtained to ensure a tolerance of less than 1.0 mph.

For the roadways with low traffic volumes, seventy-five (75) speed measurements were collected. Due to the smaller variance in data at these locations (i.e. lower standard deviation), smaller sample sizes were obtained but a tolerance of less than 1.0 mph was still ensured.

i. Vertical and Horizontal Curves (Advisory)

Vertical and/or horizontal advisory speed warning signs were documented during the field analysis. Typically these advisory speed locations involved vertical or horizontal highway curves, which advise motorists of a potential hazardous condition. When provided the advisory speed or supportive speed plate was documented (i.e. 20 mph). Advisory speeds are not enforceable by law and are suggested as a warning to advise vehicle operators that a potential hazard exists along the vehicular route. Typically these advisory speed locations involve a reduction of speed because of a potential hazard which may involve:



- *Changes in horizontal and/or vertical geometrics;*
- *Highway and/or roadway surface conditions;*
- *Converging traffic lanes and/or intersections;*
- *Advance notification of traffic control devices or entrances/crossings and;*
- *Others as appropriate to the site conditions.*

BAI's investigations only documented the locations where the advisory speed signs were posted with the intent to reduced driver's speed. No analysis or measurement was performed by BAI in the areas as to the posted speed, site constraints, actual advisory speed or physical conditions that had an impact to the advisory speed.

j. General Pavement Condition

The roadway's pavement was visually inspected for surface distress, geometrics and ride, which may have an impact to vehicle speed and driver's perception. Surface distress included a visual evaluation of the pavement condition (i.e. the amount of cracking, disintegration and/or rutting along the road). The route's ride was evaluated on the "smoothness" of the road driving at the posted speed limit.

The overall general conditions for each of the road segments were evaluated and assigned a condition of "good", "fair" or "poor". "Good" represented a smooth ride and road conditions that would not require the driver to reduce speed along the route. "Fair" assessments represented opportunities for a driver to reduce speed based upon their visual perception or physical site conditions, while "poor" represented pavement conditions that did warrant vehicle speed reduction for safe travel.

k. Thru Lanes

The number of lanes (per direction) that were available for thru traffic was field observed and noted. For some bi-directional roadways, the number was noted as "x/y"; "x" for the number of thru lanes in one direction of the segment and "y" for the number of thru lanes in the opposite direction of the segment (i.e., 2/3 thru lanes). For one-way roadways, the number was noted as "0/y"; "0" for the non-existent travel way of the segment and "y" for the number of thru lanes of the one-way segment. The numbers for the thru lanes do not take into consideration whether parking was allowed in a designated thru lane for the AM or PM peak hours.

l. Turn Lanes

Turning lanes for intersecting roads and/or locations were examined for the roadway segment. These would include right/left turning lanes, turning bays, two-way turn lanes, etc. Since multiple turning movement opportunities typically exist throughout the entire roadway segment, the turning lanes were grouped, per the most prominent vehicular movement or combination (i.e. left or right turn; left and right turn). If a highway segment had only an isolated turn lane or did not have a turn lane, it was noted as none.



m. On-Street Parking

A majority of the D.C. roads have some type of on-street parking adjacent to the roadway. The on-street parking could have an effect on vehicular speed, depending on the roadway's width and presence of the parking activity. While actual lane widths were not measured, the majority of lanes were observed to be in the 12-foot to 15-foot range, when parking was restricted. On-street parking along the roadway segment was documented as either present or not (Yes/No) and if present in one direction only.

n. Pedestrian Activity

Pedestrian activity and/or presence, was defined as either "high", "moderate" or "low". "High" pedestrian activity represented a continuous large volume of pedestrian activity, which appeared to congest and obstruct highway operations. "Moderate" pedestrian observations represented at-times, free flow conditions but also congested operations during other times. "Low" pedestrian activity represented very low or no pedestrian volumes, with free flow and no general obstructions.

o. Development

The type of development that was adjacent to the roadway segments as observed. These existing land development characteristics were based upon visual observations during the study period and do not reflect and D.C. land or zoning regulations. The type of development involved:

Commercial: Typically businesses related activities, including retail and wholesale shopping and any establishment intended to exchange goods, services or entertainment. This included buildings used for office space and all types of business development, including parking garages and parking lots.

Residential: These locations involved personal dwellings or houses, such as single-family homes, multi-story homes, town-house and/or row homes, condominiums, apartments, etc.

Monument/Recreational: Any type of national or local park/monument intended for display, tourist attraction and/or leisure. Typical examples include the Korean War Memorial, Capital Building, Washington Monument, etc.

Bridge/Tunnel: Roadway segments that traverse over/beneath water, other roadways, parks, etc. and that have no vehicular access to them other than their end locations. These locations would include the George-Washington Bridge and the Lincoln Tunnel.

Highway: Roadway segments with controlled access and are posted for travel speeds of 45 mph and greater. This includes Interstates, Freeways, Parkways, etc. Typical examples are Interstate-395, Baltimore-Washington Parkway or G-W Parkway.



p. Speed Zones

Speed zone(s) were identified for road segments that had travel speeds altered due to a specific reason. These would include school zones, fire stations or an established speed zone camera system. These zones were either identified by school signs, the camera system itself and as observed in the field. These areas have a direct effect on vehicle speed, especially the permanent speed zone camera systems that have been established for some time.

q. DC Law/Code

The Director's/Mayor's Order Number (XX-XXX) was gathered and compared to actual speed postings. This information was obtained from the dDOT from historical documentation and as recorded in official laws and ordinances. Any street or highway that was posted for a 25 mph has a Director's/Mayor's Order Number of 73-173, in accordance with dDOT criteria.

r. Annual Average Weekday Traffic (AAWT)

Annual Average Weekday Traffic (AAWT) was gathered and collected from the D.C. traffic volume map for the nearest traffic count location to the roadway study segment. The traffic count data was provided by dDOT as part of the Highway Performance and Monitoring System links (HPMS). 24-hour machine counts were adjusted to the day of the week and to the Average Annual Weekday (AAWT) Traffic. All numbers are expressed in Average Annual Weekday Traffic (AAWT) volumes, expressed in thousands, and rounded to the nearest 100.

s. Speed Accident Data

The number of *speed* related accidents for each roadway that have been recorded from the 2002-2004 period, as provided by dDOT. The accident numbers represent the total number of collisions for the entire listed road and included accidents where no specific locations were provided, other than the roadway.

t. Remarks

Any additional information of a roadway that was needed to help clarify/supplement an existing characteristic or was needed in addition to any of the characteristics that are listed.

5. Technical Investigations

5.1 Speed Study Tables

The following Table I - Summary Speed Tables, (*Pages 1 thru 8*), represent a summary of Brudis & Associates, Inc. field surveys, speed analysis and roadway documentation that can be used to determine regulatory speeds along the highways and routes. Specific roadway documentation and supplemental data, as related to a highway segment and field observations, was included in separate appendixes to this D.C. Speed Study.

D.C. Speed Study

August, 2006



Table I
Summary Speed Tables

District of Columbia Speed Study

Contract PO-KA 2002-T-0034 (August, 2006)

ROUTE NAME (Begin/End Study Location)	Quadrant	Ward	LENGTH Approx. (Miles)	ROAD CLASSIFICATION	POSTED SPEED (MPH)	MEDIAN SPEED (MPH)	COMFORT SPEED (MPH)	85th PERCENTILE (MPH)	VERTICAL CURVES (Advisory)	HORIZONTAL CURVES (Advisory)	GENERAL PAVEMENT CONDITION	THRU LANES	TURN LANES	ON-STREET PARKING	PEDESTRIAN ACTIVITY	DEVELOPMENT	SPEED ZONES	D.C. LAW or CODE	AAWT	SPEED ACCIDENT DATA	REMARKS
Adams Mill Road Kingle Rd. / Harvard St.	NW	1	0.6	Minor Arterial	25	32	30	35	No	No	Good	1/2	Left, Right	No	Low	Residential, Monument/Rec.	School	N/A	25.1	2	SB 2 Lanes and NB Parking - Kenyon to Kingle
Alabama Avenue MLK Jr. Ave. / Good Hope Rd. Good Hope Rd. / 38th St. 38th St. / Burns St. / Stanley St.	SE SE SE	8 7 7	2.3 0.9 0.9	Minor Arterial Minor Arterial Minor Arterial	25 25 30	27 29 30	30 30 35	32 35 36	No No No	No Yes (15,20,25) No	Good Good Good	1/1 2/2 1/1	Left, Right Left, Right None	Yes Yes Yes	Low Low Low	Residential Residential Residential, Monument/Rec.	School School School	73-173 73-173 73-173	23.7 11.3 11.8	54	2 Lanes - 25th to Good Hope Bike Lane - Pennsylvania to Massachusetts
Alaska Avenue Kalmia Ave. / Holly St. Holly St. / 14th St. 14th St. / 16th St.	NE NE NE	4 4 4	0.3 0.2 0.3	Minor Arterial Minor Arterial Minor Arterial	30 30 30	32 33 31	30 30 30	35 38 37	No No No	No No No	Good Good Good	1/1 1/1 1/1	None None None	Yes Yes Yes	Low Low Low	Residential Residential Residential	School No No	N/A N/A N/A	4.0 4.0 7.2	2	No Parking from Kalmia to 12th, Turn Lanes at Kalmia Turn Lanes at 16th
Anacostia Freeway (DC 295) District Line / East Capitol St. (Ramps) East Capitol St. (Ramps) / Pennsylvania Ave. Pennsylvania Ave. (Ramps) / I-295	NE SE SE	7 7 8	2.0 1.4 0.9	Freeway/Expressway Freeway/Expressway Freeway/Expressway	45 45 50	57 51 60	65 65 65	61 56 64	No No No	No No No	Good Good Good	3/3 2/3 2/2	Right None None	No No No	Low Low Low	Highway Highway Highway	No No No	62-15 62-15 62-15	98.9 77.1 77.1	6	
Arizona Avenue Loughboro Rd. / McArthur Blvd. McArthur Blvd. / Carolina Pl. Carolina Pl. / Canal Rd.	NW NW NW	3 3 3	0.3 0.2 0.1	Minor Arterial Minor Arterial Minor Arterial	25 25 25	30 29 28	30 30 30	34 32 31	No No No	No Yes No	Good Good Good	1/1 1/2 1/2	None None None	Yes No No	Low Low Low	Residential Residential Residential	School No No	N/A N/A N/A	14.3 25.5 23.1	9	
Arkansas Avenue 16th St. / Georgia Ave.	NW	4	1.0	Minor Arterial	25	29	30	35	No	No	Good	1/1	None	Yes	Low	Residential, Commercial	School	N/A	11.0	9	
Arland D. Williams Junior Bridge (14th Street) I-395-Route 1 / District Line	SW	2	0.6	Freeway/Expressway	40	48	55	55	No	No	Good	0/4	None	No	Low	Bridge/Tunnel	No	N/A	83.3	0	
Arlington Memorial Bridge Memorial Dr. / Potomac Pkwy	SW	2	0.4	Principal Arterial	25/30	40	40	46	No	No	Good	3/3	Left, Right	No	Low	Bridge/Tunnel	No	DN-87-250	73.0	0	
Beach Drive Wise Rd. / Rock Cr. and Potomac Pkwy.	NW	3/4	5.4	Minor Arterial	25	31	35	35	No	Yes (20)	Good	1/1	None	No	Low	Monumental/Recreational	No	N/A	14.7	1	Tunnel - Zoo to Connecticut Ramp
Benning Road Maryland Ave. / 25th Pl. 25th Pl. / Minnesota Ave. Minnesota Ave. / East Capitol St. East Capitol St. / District Line	NE NE NE SE	5/6/7 5/7 7 7	0.7 1.2 0.8 1.2	Principal Arterial Principal Arterial Principal Arterial Minor Arterial	30 30 25/30 25/30	33 36 30 38	40 40 35 35	39 41 34 42	No No No No	No No No No	Poor Poor Poor Poor	3/3 4/4 1/1 1/1	None None None None	Yes No Yes Yes	Low Low Low Low	Residential, Commercial Residential, Commercial Residential, Commercial Residential, Commercial	School School/Speed No School	N/A N/A N/A N/A	42.0 38.0 17.3 21.9	89	Median, Bridge, 2 Thru Lanes from Minnesota to 36th 30 mph EB, 25 mph WB 25 mph WB from C to East Capitol
Bladensburg Road District Line / 35th St. 35th St. / Central Ave. Central Ave. / Douglas St. Douglas St. / New York Ave. New York Ave. / Mount Olivet Rd. Mount Olivet Rd. / H St. / Benning Rd.	NE NE NE NE NE NE	5 5 5 5 5 5	0.1 0.3 0.3 0.3 0.8 0.6	Minor Arterial Minor Arterial Minor Arterial Minor Arterial Minor Arterial Minor Arterial	30 30 30 30 25 25	27 31 34 31 37 30	30 30 30 30 30 30	32 35 39 36 42 36	No No No No No No	No No No No No No	Good Good Good Good Good Good	2/3 2/2 3/3 2/2 3/3 2/2	Left None None None None None	No Yes No Yes No Yes	Low Low Low Low Low Low	Residential, Commercial Residential, Commercial Residential, Commercial Residential, Commercial Commercial Commercial Commercial	No No No No School No	73-173 75-173 73-173 73-173 73-173 N/A	28.5 28.5 15.3 27.1 26.8 19.2	38	Median, Speed Limit Not Posted Median Median, Speed Limit Not Posted, Pavement Poor from 30th-South Dakota Median, Opening in Median Median Median, 3/3 lanes with No Parking from Morse to H/Benning
Blair Road District Line / Aspen St. Aspen St. / Peabody St. Peabody St. / Ogilthorpe St. Ogilthorpe St. / McDonald Pl.	NW NW NW NW	4 4 4 4	0.8 0.7 0.1 0.1	Minor Arterial Minor Arterial Minor Arterial Minor Arterial	25 25/30 30 30	29 36 30 30	30 30 35 35	32 39 35 35	No No No No	Yes Yes (20) No No	Good Good Good Good	1/1 1/2 2/2 2/2	Left Right None None	No Yes (SB) No No	Low Low Low Low	Residential Residential Residential Residential	No No No No	62-796 62-796 62-796 62-796	30.3 34.3 14.0 8.0	8	
Bowen Road Stanley St. / Burns St. / District Line	SE	7	0.3	Minor Arterial	30	26	35	31	No	No	Good	1/1	None	Yes	Low	Residential	No	62-796	9.3	8	
Branch Avenue District Line / Alabama Ave. Alabama Ave. / Pennsylvania Ave. Pennsylvania Ave. / Minnesota Ave.	SE SE SE	7 7 7	0.5 0.5 0.6	Principal Arterial Principal Arterial Minor Arterial	25 25 25	31 41 41	25 30 35	36 47 45	No No No	Yes No No	Good Good Good	1/1 1/1 1/1	Left None None	No Yes Yes	Low Low Low	Residential Residential, Monument/Rec. Residential	No No No	N/A N/A N/A	20.3 27.5 8.6	12	NB Left Turn at Pennsylvania
Brentwood Parkway Penn St. / New York Ave.	NE	5	0.3	Minor Arterial	25	34	35	38	No	No	Good	2/2	None	No	Low	Monument/Recreational	School	73-173	56.7	2	Speed Limit Not Posted; University, Median
Brentwood Road Rhode Island Ave. / W St. W St. / V St. V St. / T St.	NE NE NE	5 5 5	0.4 0.2 0.1	Minor Arterial Minor Arterial Minor Arterial	25 25 25	35 31 27	35 35 30	39 34 31	No No No	No No No	Good Good Good	2/2 2/2 0/2	None L (B-Dir) None	No No No	Low Low Low	Residential, Commercial Commercial Commercial	No No No	N/A N/A N/A	18.4 18.9 9.5	6	Bi-Directional Left Turn Lane SB One-Way, Parking on West Side Only
C Street Independence Ave. / East Capitol St. / 21st St. 21st St. / 15th St. 15th St. / 6th St. 6th St. / 4th St.	NE NE NE NE	6 6 6 6	0.1 0.4 0.8 0.1	Minor Arterial Minor Arterial Minor Arterial Minor Arterial	25 25 25 25	34 30 27 25	30 30 25 25	40 38 31 29	No No No No	No No No No	Good Good Good Good	0/3 2/3 0/1 2/2	None None None Left, Right	No Yes Yes No	Low Low Low Low	Residential Residential Residential Residential	No School School School	82-57 82-57 82-57 82-57	14.7 10.0 7.7 8.4	18	
Calvert Street Tunlaw Rd. / Wisconsin Ave. 29th St. / 24th St. 24th St. / Adams Mill Rd.	NW NW NW	3 3 1/3	0.1 0.3 0.5	Minor Arterial Minor Arterial Minor Arterial	25 25 25	23 28 27	30 25 25	27 32 31	No No No	No No No	Good Good Good	1/1 1/1 1/1	None L (B-Dir) None	Yes (EB) Yes Yes	Low Low Low	Residential Residential Residential, Commercial	No School No	N/A N/A N/A	3.3 16.8 13.2	1	Speed Limit Not Posted, No Parking and 1/2 lanes from 37th to Wisconsin Bike Lane; Median from 29th to 28th Bike Lane, No Parking from Woodley to Baltimore
Canal Road Whitehurst Fwy. / Foxhall Rd. Foxhall Rd. / Arizona Ave. Arizona Ave. / Chain Br.	NW NW NW	3 3 3	0.5 2.5 0.5	Principal Arterial Principal Arterial Principal Arterial	25/35 35 35	38 45 35	45 45 45	45 52 43	No No No	No No No	Good Good Good	2/2 1/1 1/2	None None None	No No No	Low Low Low	Monument/Recreational Monument/Recreational Monument/Recreational	No No No	82-57 82-57 82-57	44.4 27.0 27.0	9	
Central Avenue East Capitol St. / 53rd Pl. 53rd Pl. / District Line	SE SE	7 7	0.4 0.3	Minor Arterial Minor Arterial	25/30 30	35 32	30 30	41 37	No No	Yes (20) No	Good Good	1/1 1/1	None None	Yes (EB) Yes (EB)	Low Low	Residential Residential	No School	73-173 73-173	10.6 8.7	9	
Chain Bridge Canal St. / District Line	NW	3	0.3	Principal Arterial	25	35	40	38	No	No	Good	1/2	None	No	Low	Bridge/Tunnel	No	73-173	24.1	0	Speed Limit Not Posted; 35; center lane changes Dir. From 6-10 AM
Clara Barton Parkway Chain Br. / District Line	NW	3	0.5	Freeway/Expressway	35	47	45	53	No	No	Good	1/2	None	No	Low	Monument/Recreational	No	N/A	19.7	0	Small Parking Lot Near Chain Bridge SB side
Cleveland Avenue 34th St. / 29th St.	NW	3	0.7	Minor Arterial	25	27	30	36	No	No	Good	1/1	None	Yes	Low	Residential	School	N/A	10.5	2	Median from 29th to Garfield

District of Columbia Speed Study
Contract PO-KA 2002-T-0034 (August, 2006)

ROUTE NAME (Begin/End Study Location)	Quadrant	Ward	LENGTH Approx. (Miles)	ROAD CLASSIFICATION	POSTED SPEED (MPH)	MEDIAN SPEED (MPH)	COMFORT SPEED (MPH)	85th PERCENTILE (MPH)	VERTICAL CURVES (Advisory)	HORIZONTAL CURVES (Advisory)	GENERAL PAVEMENT CONDITION	THRU LANES	TURN LANES	ON-STREET PARKING	PEDESTRIAN ACTIVITY	DEVELOPMENT	SPEED ZONES	D.C. LAW OF CODE	AAWT	SPEED ACCIDENT DATA	REMARKS
Martin Luther King Junior Avenue S St. / W St. W St. / Eaton Rd. Eaton Rd. / Lebaum St. Lebaum St. / 4th St. 4th St. / Atlantic St.	SE	8	0.2	Minor Arterial	25	23	30	26	No	No	Good	0/2	Left, Right	Yes	Low	Commercial	No	61-1276	7.5	50	
Maryland Avenue 6th St. / Bladensburg Rd. - Benning Rd.	NE	6	0.5	Minor Arterial	25	31	35	36	No	No	Good	2/2	None	Yes	Low	Residential	No	N/A	10.5	8	Median
Massachusetts Avenue 11th St. / 7th St. 1st St. / North Capitol St. North Capitol St. / 9th St. 9th St. / 13th St. 13th St. / Bataan St. Bataan St. / R St. R St. / Observatory Cir. Observatory Cir. / Wisconsin Ave. Wisconsin Ave. / Macomb St. Macomb St. / Albermarle St.	NE	6	1.1	Minor Arterial	25	30	25	33	No	No	Good	1/1	None	Yes	Low, Moderate	Residential, Commercial	No	N/A	22.7	24	Bike Lane - 11th to C; Break in Mass. From 6th to 4th
Michigan Avenue District Line / South Dakota Ave. South Dakota Ave. / Perry St. Perry St. / Franklin St. Franklin St. / Washington Hospital	NE	5	0.4	Minor Arterial	25	32	30	36	No	Yes	Good	2/2	None	No	Low	Residential	School	N/A	26.1	26	
Military Road District Line / Nebraska Ave. Nebraska Ave. / Oregon Ave. Oregon Ave. / 13th St.	NW	3	1.0	Minor Arterial	25	30	30	35	No	No	Good	1/1	None	Yes (EB)	Low	Residential	No	N/A	15.3	4	"Speed Checked by Radar" signs
Minnesota Avenue Kane Pl. / Grant St. Grant St. / A St. A St. / Pennsylvania Ave. Pennsylvania Ave. / Good Hope Rd.	NE	7	0.5	Minor Arterial	25/30	32	30	38	No	Yes (20)	Fair	2/2	None	No	Low	Commercial	No	N/A	17.4	47	R. Turn Lanes at Nannie Helen Burroughs
Missouri Avenue 13th St. / North Capitol St.	NW	4	1.2	Principal Arterial	25	34	30	38	No	No	Good	2/2	None	No	Moderate	Residential	School	N/A	18.4	20	
Monroe Street Michigan Ave. / 15th St. 15th St. / South Dakota Ave.	NE	5	0.7	Minor Arterial	25	27	30	30	No	No	Good	1/1	None	Yes (EB)	Low, Moderate	Residential	School	N/A	11.0	13	
Mount Olivet Road 9th St. - Brentwood Rd. / Bladensburg Rd.	NE	5	0.7	Minor Arterial	25	30	35	37	No	No	Good	2/2	None	No	Low	Residential, Commercial	School	N/A	17.0	16	Speed Limit Not Posted; Cemetery
Mount Vernon Place 7th St. / 9th St.		2	0.1	Minor Arterial	25	21	25	25	No	No	Good	2/2	None	Yes	High	Commercial	No	N/A	21.9	0	NFSL
Nannie Helen Burroughs Avenue Kenilworth Ave. / Lowrie Pl. Lowrie Pl. / District Line	NE	7	1.1	Minor Arterial	30	28	30	34	No	No	Good	2/2	None	Yes	Low	Residential	School	N/A	10.4	12	Median from 36th-Lowrie, Min. Kenilworth; Some No P
Naylor Road District Line / S St.	SE	7/8	1.3	Minor Arterial	25	35	30	40	No	No	Good	1/1	None	Yes	Low	Residential, Monument/Rec.	School	N/A	14.4	28	No Parking from Alabama to District Line
Nebraska Avenue Military Rd. / Wisconsin Ave. Wisconsin Ave. / Chain Bridge Rd. - Indian Ln.	NW	3	1.2	Principal Arterial	30	36	30	39	No	No	Good	1/1	None	Yes	Low	Residential	School	N/A	23.1	7	Very Few Parked Vehicles along entire Nebraska
New Hampshire Avenue Park Rd. / Illinois Ave. Illinois Ave. / North Capitol St. North Capitol St. / 1st St. 1st St. / Peabody St. Peabody St. / District Line 15th St. - Florida Ave. / V St. V St. / 7th St. 7th St. / T St. T St. / 20th St. 20th St. / 7th St. 7th St. / K St.	NW	1/4	0.9	Minor Arterial	30	28	35	33	No	No	Good	2/2	None	Yes	Low	Residential	School	N/A	14.8	29	Median with openings
New Jersey Avenue Florida Ave. / O St. O St. / New York Ave. New York Ave. / I St. I St. / Massachusetts Ave.	NW	2/5	0.4	Minor Arterial	25	31	25	37	No	No	Good	1/1	None	Yes	Low	Residential	School	N/A	14.9	13	Speed Limit Not Posted
New Mexico Avenue Nebraska Ave. / Fulton St.	NW	3	0.8	Minor Arterial	25	26	30	31	No	No	Good	1/1	None	Yes	Moderate	Res., Commercial, Mon./Rec.	School	97-18	9.1	2	Median (Morgan to NY); Speed Limit Not Posted; SB Right Turns at New York
New York Avenue 15th St. / 9th St. 7th St. / 5th St. 5th St. / 1st St. 1st St. / North Capitol St. North Capitol St. / Penn St. - 4th St. Penn St. - 4th St. / 16th St. 16th St. / South Dakota Ave. (Ramp) South Dakota Ave. (Ramp) / District Line	NE	2	0.7	Principal Arterial	25	25	25	27	No	No	Good	2/2	None	Yes	Moderate	Commercial	No	86-166	12.0	127	Speed Limit Not Posted; SB Right Turns at New York
North Capitol Street Eastern/Chillum Pl. McDonald Pl. / Allison St. Allison St. / Michigan Ave. Michigan Ave. / S St. S St. / F St. F St. / Louisiana Ave.	N/A	4	0.1	Minor Arterial	25	24	25	27	No	Yes	Good	1/1	None	Yes	Low	Residential	School	62-317	1.8	59	Speed Limit Not Posted; Median

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North Carolina Avenue Constitution Ave. / 7 th St. NE	NE	6	0.2	Minor Arterial	25	30	30	35	No	No	Good	2/2	None	Yes	Low	Residential	No	N/A	16.0	2	Speed Limit Not Posted
P Street Wisconsin Ave. / Connecticut Ave.	NW	2	1.1	Minor Arterial	25	29	25	32	No	No	Good	1/1	None	Yes	Low	Residential, Commercial	No	N/A	7.0	15	
Park Place Rock Creek Church Rd. / Michigan Ave. - Columbia	NW	1/5	0.6	Minor Arterial	25	36	30	43	No	No	Good	0/2	None	Yes (SB)	Low	Residential, Monument/Rec.	No	N/A	1.9	4	One-Way
Park Road 14th St. / 17th St. 17th St. / Beach Dr.	NW NW	1 1/4	0.3 0.3	Minor Arterial Minor Arterial	25 25	21 24	25 30	23 32	No No	No Yes (20)	Good Good	0/2 1/1	None None	Yes No	Low Low	Residential, Commercial Residential, Monument/Rec.	School School	N/A N/A	9.6 9.6	7	One-Way, Parking on Left Side Only Some Isolated Parking
Pennsylvania Avenue 29th St. / 17th St. 15th St. / 3rd St. 2nd St. / 27th St. 27th St. / Carpenter St. - 33rd St. Carpenter St. - 33rd St. / Alabama Ave. Alabama Ave. / District Line	NW NW SE SE SE SE	2 2/6 6 7 7 7	1.1 1.0 2.2 0.5 0.6 0.3	Principal Arterial Principal Arterial Principal Arterial Principal Arterial Principal Arterial Principal Arterial	25 25 30 30 30 30	24 29 32 33 33 31	25 25 30 35 40 40	29 32 37 38 37 36	No No No No No No	No No No No No No	Good Good Good Good Good Good	2/2 4/4 3/3 3/2 2/2 1/2	Left, Right Left, Right Left, Right Right None None	Yes Yes Yes No No No	Low High High Low Low Low	Commercial Commercial Commercial/Residential Residential, Commercial Monumental/Recreational Residential	No No No School No No	75-98 75-98 75-98 75-98 75-98 75-98	35.9 49.1 93.0 33.3 26.8 21.8	67	
Piney Branch Parkway Arkansas Ave. / Beach Dr.	NW	1/4	0.7	Minor Arterial	25	38	35	42	No	No	Good	1/1	None	No	Low	Monumental/Recreational	No	N/A	11.4	0	Starts and Ends at Arkansas and Beach
Piney Branch Road District Line / Underwood St. Underwood St. / Fort Stevens Dr.	NW NW	4 4	0.8 0.4	Minor Arterial Minor Arterial	30 30	30 33	35 35	35 38	No No	No Yes (25)	Good Good	1/1 2/2	None None	Yes No	Low Low	Residential, Commercial Residential, Commercial	School School	N/A N/A	15.2 13.7	4	Median and Bike Lane from Butternut to Underwood Parking from 13th to Fort Stevens
Porter Street Williamsburg La. / 30th St. 30th St. / 34th St. 34th St. / 38th St.	NW NW NW	3 3 3	0.6 0.5 0.3	Minor Arterial Principal Arterial Principal Arterial	30 25 25	32 26 28	35 25 25	37 30 32	No No No	No Yes (20) No	Good Good Good	1/1 1/1 1/1	Left, Right None None	Yes (WB) Yes (WB) Yes (WB)	Low Low Low	Residential Residential Residential	No No No	N/A N/A N/A	12.3 12.3 12.3	4	
Potomac Avenue 18th St. / 19th St.	SE	6	0.1	Minor Arterial	25	31	30	33	No	No	Good	0/2	None	Yes	Low	Residential	No	N/A	8.3	1	
Potomac River Freeway Whitehurst Fwy. / 27th St. (Ramp) 27th St. (Ramp) / I-66 (Ramp) I-66 (Ramp) / Ohio Dr.	NW NW NW/SW	2 2 2	0.9 0.2 0.5	Freeway/Expressway Freeway/Expressway Freeway/Expressway	40 40 40	36 42 42	40 45 45	40 48 47	No No No	No No No	Good Good Good	1/1 4/4 3/2	Right Left, Right None	No No No	Low Low Low	Highway Highway Highway	No No No	N/A N/A N/A	100.0 100.0 100.0	0	Ramp onto Potomac Freeway
Q Street 35th St. / Wisconsin Ave. Wisconsin Ave. / 22nd St. - Florida Ave. 22nd St. - Florida Ave. / Rhode Island Ave. Rhode Island Ave. / Florida Ave. 44th St. / Potomac	NW NW NW NW NW	2 2 2 2/6 3	0.2 0.9 1.2 0.8 0.6	Minor Arterial Minor Arterial Minor Arterial Minor Arterial Minor Arterial	25 25 25 25 25	21 26 22 22 22	25 25 25 25 20	25 32 26 25 27	No No No No No	No No No No No	Good Good Good Good Good	0/2 1/1 0/1 0/1 1/1	None Left, Right None None None	Yes Yes Yes Yes Yes	Low Low Low Low Low	Residential Residential Residential Residential Residential	No No School School School	N/A N/A N/A N/A N/A	33.7 33.7 19.2 10.6 5.9	8	Speed Limit Not Posted; No park NB between MacArthur and Foxhall
R Street Florida Ave. / 15th St. 15th St. / Massachusetts Ave.	NW NW	2/5 2	1.2 0.9	Minor Arterial Minor Arterial	25 25	23 23	25 25	28 27	No No	No No	Good Good	0/1 0/1	None None	Yes Yes	Low Low	Residential Residential	School School	N/A N/A	8.0 8.0	12	Speed Limit Not Posted; Bike Lane; One-Way Bike Lane; One-Way
Raoul Wallenberg Place Independence Ave. / Maine Ave.	SW	2	0.2	Principal Arterial	25	29	30	34	No	No	Good	2/2	None	No	High	Monument/Recreational	No	N/A	18.1	0	Speed Limit Not Posted
Reno Road Chevy Chase Pkwy. / Van Ness St. Van Ness St. / Quebec Pl.	NW NW	3 3	1.8 0.3	Minor Arterial Minor Arterial	25 25	30 30	30 30	32 33	No No	No No	Good Good	1/1 1/1	Left, Right Left, Right	No No	Low Low	Residential Residential	School School	N/A N/A	23.2 16.7	4	
Reservoir Road Wisconsin Ave. / Foxhall Rd. Foxhall Rd. / MacArthur Blvd.	NW NW	2/3 3	1.0 0.6	Minor Arterial Minor Arterial	25 25	29 26	30 30	33 32	No No	No No	Good Good	1/1 1/1	None None	Yes Yes	Low Low	Residential, Monument/Rec. Residential	School School	N/A N/A	17.1 19.2	1	WB Wisconsin to 35th - No Parking
Rhode Island Avenue Connecticut Ave. / 16th St. 16th St. / 13th St. 13th St. / New Jersey Ave. New Jersey Ave. / North Capitol St. North Capitol St. / 10th St. 10th St. / 17th St. 17th St. / District Line	NW NW NW NW NW NW NW	2 2 2 1/5 5 5 5	0.3 0.4 0.7 0.5 1.0 0.7 1.1	Minor Arterial Minor Arterial Principal Arterial Principal Arterial Principal Arterial Principal Arterial Principal Arterial	25 25 25 25/30 30 30 30	21 26 33 33 28 35 32	25 25 30 30 30 30 30	26 32 39 38 33 40 37	No No No No No No No	No No No No No No No	Good Good Good Good Good Good Good	1/2 1/1 2/2 2/2 2/2 2/2 2/2	None None Left None None None None	Yes Yes Yes Yes Yes Yes Yes	High High Low Low Low Low Low	Commercial Commercial Commercial Residential, Commercial Residential Residential, Commercial Residential, Commercial	No No School No School No School	N/A N/A N/A N/A N/A N/A N/A	12.6 10.2 17.1 28.9 27.4 32.3 29.0	38	Median Median; 3 lanes from Florida to New Jersey Median Median
Ridge Road Bowen Rd. / Bums St. Bums St. / G St. G St. / Minnesota Ave.	SE SE SE	7 7 7	0.2 0.5 0.9	Minor Arterial Minor Arterial Minor Arterial	25 25 25	31 32 28	30 30 30	39 40 34	No No No	No No No	Good Good Good	1/1 2/2 1/1	None None None	Yes No Yes	Low Low Low	Residential, Monument/Rec. Residential Residential	No No School	N/A N/A N/A	4.7 7.0 8.8	9	No Parking
Riggs Road North Capitol St. / South Dakota Ave. South Dakota Ave. / District Line	NE NE	4/5 4	0.4 0.5	Principal Arterial Minor Arterial	25 25	24 29	30 30	27 35	No No	No No	Good Good	2/2 1/2	None None	No Yes	Moderate Moderate	Residential Residential	School School	N/A N/A	28.9 14.3	8	
River Road District Line / 44th St. 44th St. / Wisconsin Ave.	NW NW	3 3	0.4 0.5	Minor Arterial Minor Arterial	25 25	31 27	30 30	36 32	No No	No No	Good Good	1/1 1/1	None None	Yes Yes	Low Low	Residential Commercial	No School	N/A N/A	13.0 7.0	1	
Rochambeau Memorial Bridge I-395/Route 1 / District Line	SW	2	0.5	Freeway/Expressway	45	52	55	57	No	No	Good	2/2	None	No	Low	Bridge/Tunnel	No	DN-87-250	83.3	0	
Rock Creek and Potomac Parkway Beach Dr. / Waterside Dr. Waterside Dr. / Virginia Ave. Virginia Ave. / Ohio Dr. Ohio Dr. / Lincoln Memorial Cir.	NW NW NW NW	2/3 2 2 2	0.1 1.9 0.8 0.1	Principal Arterial Principal Arterial Minor Arterial Minor Arterial	25/35 35 25 25	38 39 36 30	45 45 45 45	42 42 39 35	No No No No	No No No No	Good Good Good Good	2/2 2/2 2/2 1/1	Left None Left None	No No No No	Low Low Low Low	Monumental/Recreational Monumental/Recreational Commercial, Monument/Rec. Commercial, Monument/Rec.	No No No No	N/A N/A N/A N/A	25.0 25.0 48.2 48.2	2	One-Way @ Off peak Hours
Route 1 Maine Ave. / Maine Ave. (Ramp) Maine Ave. (Ramp) / George Mason Br.	SW SW	2 2	0.3 0.1	Principal Arterial Principal Arterial	35 35	40 42	55 55	46 46	No No	No No	Good Good	3/3 2/3	Right None	No No	Low Low	Highway Highway	No No	N/A N/A	188.1 188.1	1	

District of Columbia Speed Study

Contract PO-KA 2002-T-0034 (August, 2006)

ROUTE NAME (Begin/End Study Location)	Quadrant	Ward	LENGTH Approx. (Miles)	ROAD CLASSIFICATION	POSTED SPEED (MPH)	MEDIAN SPEED (MPH)	COMFORT SPEED (MPH)	85th PERCENTILE (MPH)	VERTICAL CURVES (Advisory)	HORIZONTAL CURVES (Advisory)	GENERAL PAVEMENT CONDITION	THRU LANES	TURN LANES	ON-STREET PARKING	PEDESTRIAN ACTIVITY	DEVELOPMENT	SPEED ZONES	D.C. LAW or CODE	AAWT	SPEED ACCIDENT DATA	REMARKS
Saratoga Avenue Brentwood Rd. / Rhode Island Ave.	NE	5	0.1	Minor Arterial	25	19	30	22	No	No	Good	1/2	None	No	Low	Residential	No	N/A	16.4	1	Speed Limit Not Posted
Sargent Road DL / Gallatin St. Gallatin St. / Webster St.	NE NE	5 5	0.1 0.6	Minor Arterial Minor Arterial	25 25	30 32	30 30	33 35	No No	No No	Good Good	2/2 1/1	None None	No Yes	Low Low	Residential Residential	No No	N/A N/A	15.0 12.3		No SB Parking - S Dakota to Webster
Sheriff Road Kane Pl. / District Line	NE	7	1.0	Minor Arterial	30	34	30	40	No	Yes (20)	Good	1/1	None	Yes	Low	Residential	School	N/A	3.8	6	No Parking from 43rd to Kane; 4 Horiz. Curve Signs
Sherman Avenue Park Rd. / Florida Ave.	NW	1	0.9	Minor Arterial	25	30	30	35	No	No	Good	2/2	None	Yes	Low	Residential	School	N/A	17.7	12	Striped Median
South Capitol Street District Line / Xenia St.-MLK Jr. Ave. Xenia St.-MLK Jr. Ave. / MLK Jr. Ave. MLK Jr. Ave. / Sulland Pkwy. Sulland Pkwy. / N St. N St. / Virginia Ave. Virginia Ave. / Washington Ave.	N/A N/A N/A N/A N/A N/A	8 8 8 6/8 2/6 2/6	1.0 1.0 1.4 0.9 0.2 0.1	Minor Arterial Minor Arterial Minor Arterial Minor Arterial Principal Arterial Principal Arterial	30 35/40 40 30 25 25	30 33 43 38 35 27	30 30 30 50 50 30	36 38 51 42 39 32	No No No No No No	No No No Yes No No	Good Good Good Good Good Good	2/2 3/3 2/2 3/2 2/2 3/3	Left Left, Right None None Left, Right Left	Yes No No No No No	Low Low Low Low Low Low	Residential Residential Highway Bridge/Tunnel Commercial Commercial	School No No No No No	N/A N/A N/A N/A N/A N/A	11.7 11.7 16.3 58.6 54.4 54.4		
South Dakota Avenue Riggs Rd. / Webster St. Webster St. / Rhode Island Ave. Rhode Island Ave. / US Route 50 (NY Ave.)	NE NE NE	5 5 5	1.3 1.2 1.3	Principal Arterial Principal Arterial Principal Arterial	25 25 25	36 37 41	30 30 30	42 45 45	No No No	No No Yes	Good Good Good	2/2 2/2 2/2	None None Left	No No No	Low Low Low	Residential Residential Commercial	School School School	N/A N/A N/A	16.5 23.0 36.9	44	3 thru lanes from Vista to Bladensburg
Southeast Freeway SW/SE Pennsylvania Ave. / Robert F. Kennedy (Ramp) Robert F. Kennedy (Ramp) / I-295 Split I-295 Split / I-395 Split	SE SE SW/SE	6 6 6	1.5 1.0 1.0	Freeway/Expressway Freeway/Expressway Freeway/Expressway	25 35/45 45	45 57 56	50 65 65	54 64 63	No No No	No No No	Good Good Good	2/2 3/3 4/4	None None None	No No No	Low Low Low	Highway Highway Highway	No No No	N/A N/A N/A	193.8 193.8 193.8		
Southern Avenue District Line / D St. D St. / Banning Rd. Banning Rd. / Branch Ave. Naylor Rd. / 24th St. 24th St. / 13th St. 13th St. / Indian Head Hwy.	NE/SE SE SE SE SE SE	7 7 7 8 8 8	1.1 0.8 2.3 0.7 1.5 1.5	Freeway/Expressway Freeway/Expressway Freeway/Expressway Freeway/Expressway Freeway/Expressway Freeway/Expressway	25 25 25/30 30 30 30	36 31 33 34 35 31	35 35 35 35 35 35	40 36 40 37 42 35	No No No No No No	Yes No No No No No	Good Good Good Good Good Good	1/1 2/2 1/1 1/1 2/2 1/1	None None Left, Right None Left, Right Left, Right	Yes Yes Yes Yes Yes Yes	Low Low Low Low Low Low	Residential Residential Residential Residential Residential Residential	No No No No No No	N/A N/A N/A N/A N/A N/A	12.8 9.7 11.1 10.0 14.4 17.4	110	
Sulland Parkway South Capitol St. / Firth Sterling Ave. Firth Sterling Ave. / Sheridan Rd. (Ramp) Sheridan Rd. (Ramp) / DL	SE SE SE	6/8 8 8	0.5 0.9 0.5	Freeway/Expressway Freeway/Expressway Freeway/Expressway	30/45 35/45 35/45	41 47 53	65 65 65	47 53 58	No No No	No Yes No	Good Good Good	2/3 2/2 2/2	Left, Right None None	No No No	Low Low Low	Highway Highway Highway	No No No	85-159 85-159 85-159	45.4 35.2 33.5		
Taylor Street South Dakota Ave. / Hawaii Ave. Hawaii Ave. / North Capitol St.	NE NE	5 5	1.0 0.5	Minor Arterial Minor Arterial	25 25	28 28	30 30	31 34	No No	No No	Good Good	1/1 1/1	None None	Yes No	Low Low	Residential Residential	School School	N/A N/A	6.4 11.1	8	University Speed Limit Not Posted, Some Parking
Theodore Roosevelt Bridge (I-66) Rock Cr. and Potomac Pkwy. / District Line	SW	2	1.2	Freeway/Expressway	40	51	60	57	No	No	Good	3/4	Right	No	Low	Bridge/Tunnel	No	72-257	100.0		Under Construction during Study,
Tilden Street Beach Dr. / Reno Rd.	NW	3	1.0	Minor Arterial	25	35	35	39	No	No	Good	1/1	None	Yes	Low	Residential	No	N/A	10.3		
Tunlaw Road Fulton St. / Calvert St.	NW	3	0.4	Minor Arterial	25	26	30	31	No	No	Good	1/1	None	Yes	Low	Monument/Recreational	No	N/A	8.3	0	Recreational Area
U Street 9th St. / 18th St.	NW	1/2	1.0	Minor Arterial	25	23	25	27	No	No	Good	2/2	Left, Right	Yes	Low	Commercial	No	N/A	22.0		
Vermont Avenue Massachusetts Ave. / K St.	NW	2	0.2	Minor Arterial	25	19	25	24	No	No	Good	1/1	Left, Right	Yes	Moderate	Commercial	No	N/A	21.6		Speed Limit Not Posted
Virginia Avenue Constitution Ave. / C St. C St. / 24th St. 24th St. / New Hampshire Ave. New Hampshire Ave. / Rock Creek & Potomac Pkwy.	NW NW NW NW	2 2 2 2	0.2 0.5 0.1 0.2	Minor Arterial Minor Arterial Minor Arterial Minor Arterial	25 25 25 25	25 25 29 29	30 30 30 30	29 30 34 33	No No No No	No No No No	Good Good Good Good	1/2 2/2 3/3 2/3	None None None None	Yes Yes No Yes	Moderate Moderate Moderate Moderate	Monument/Recreational Commercial Commercial Commercial	No No No No	N/A N/A N/A N/A	18.5 14.5 13.2 13.2	5	Median: 18th-C, One-Way 18th-Constitution, EB Ends: 18th Median Median Median; EB outside island; Speed Limit Not Posted
W Street MLK Jr. Ave. / 13th St.	SE	8	0.1	Minor Arterial	25	23	25	28	No	No	Good	0/2	Left/Right	Yes	Low	Residential	No	N/A	12.0		Speed Limit Not Posted
Walbridge Place Park Rd. / Adams Mill Rd.	NW	1	0.1	Minor Arterial	25	34	25	35	No	No	Good	1/1	None	Yes (NB)	Low	Residential	No	N/A	N/A		Speed Limit Not Posted, Parking on NB Side Only
Washington Avenue Independence Ave. / I-395 (Ramp) I-395 (Ramp) / South Capitol St.	SW SW	2 2	0.3 0.1	Principal Arterial Principal Arterial	25 25	26 26	35 35	30 30	No No	No No	Good Good	2/3 3/3	Left, Right Left	No No	Low Low	Commercial Commercial	No No	N/A N/A	28.4 28.4		Speed Limit Not Posted; Parking on right Side; Gov't Facilities Speed Limit Not Posted; Gov't. Facilities
Western Avenue Chevy Chase Cir. / 47th St. 47th St. / Westmoreland Cir.	NW NW	3 3	1.0 0.6	Minor Arterial Minor Arterial	25 25	25 34	30 30	28 37	No No	No No	Good Good	2/2 1/1	Left, Right None	Yes Yes	Low Low	Residential, Commercial Residential	No No	97-01 97-01	18.4 15.4		
West Virginia Avenue Montana Ave. / 17th St. 17th St. / K St.	NE NE	5 5/6	0.1 1.1	Minor Arterial Minor Arterial	25 25	31 28	30 30	35 32	No No	No No	Fair Good	1/1 2/2	None None	Yes No	Low Low	Residential, Commercial Commercial	School No	N/A N/A	11.4 4.4	12	Speed Limit Not Posted Speed Limit Not Posted
Wheeler Road Alabama Ave. / District Line	SE	8	1.0	Minor Arterial	25	37	30	42	No	No	Good	1/1	None	Yes	Low	Residential	School	N/A	13.8	15	Dead Ends at Alabama
Whitehurst Freeway M St. Canal Rd. / 27th St.	NW	2	0.3	Freeway/Expressway	25/35	34	50	40	No	No	Good	2/2	None	No	Low	Bridge/Tunnel	No	N/A	42.2		
Wisconsin Avenue District Line / Nebraska Ave. Nebraska Ave. / Massachusetts Ave. Massachusetts Ave. / 34th St. 34th St. / M St. M St. / K St.	NW NW NW NW NW	3 3 2/3 2 2	1.1 1.4 1.0 0.8 0.2	Principal Arterial Principal Arterial Principal Arterial Principal Arterial Minor Arterial	30/35 30 30 25 25	28 33 30 24 20	40/35 35 30 30 30	33 38 34 27 25	No No No No No	No No No No No	Good Good Good Good Fair	2/2 2/2 2/2 1/1 1/1	None None None None None	Yes Yes Yes Yes Yes	Moderate Moderate Moderate Moderate Moderate	Commercial Commercial Commercial Commercial Commercial	No School School School No	86-125 86-125 86-125 N/A N/A	25.1 30.0 32.0 17.0 7.1	27	Posted Speed = 35mph past DC Line No Parking - (Volta to P) and (O to N) Speed Limit Not Posted

District of Columbia Speed Study

Contract PO-KA 2002-T-0034 (August, 2006)

ROUTE NAME (Begin/End Study Location)	Quadrant	Ward	LENGTH Approx. (Miles)	ROAD CLASSIFICATION	POSTED SPEED (MPH)	MEDIAN SPEED (MPH)	COMFORT SPEED (MPH)	95th PERCENTILE (MPH)	VERTICAL CURVES (Advisory)	HORIZONTAL CURVES (Advisory)	GENERAL PAVEMENT CONDITION	THRU LANES	TURN LANES	ON-STREET PARKING	PEDESTRIAN ACTIVITY	DEVELOPMENT	SPEED ZONES	D.C. LAW or CODE	AAWT	SPEED ACCIDENT DATA	REMARKS
3rd Street Pennsylvania Ave. / Jefferson St.	NW/SW	2	0.3	Principal Arterial	25	24	30	29	No	No	Good	2/2	None	Yes	High	Monument/Recreational	No	N/A	7.7	49	Speed Limit Not Posted
4th Street Florida Ave. / Howard Pl. - McMillan Dr. Pennsylvania Ave. / I St. Michigan Ave. / Adams St. D St. / C St. - Maryland Ave.	NW NW/SW NE NE	1 2/6 5 6	0.6 0.7 0.8 0.2	Minor Arterial Minor Arterial Minor Arterial Minor Arterial	25 25 25 25	26 25 29 19	25 25 30 25	32 32 34 22	No No No No	No No No No	Good Good Good Good	1/1 2/2 1/1 0/1	None None None Left, Right	Yes Yes Yes Yes	Moderate Moderate Low Moderate	Residential Monument/Residential Residential, Commercial Residential	School No School No	N/A N/A N/A N/A	8.8 4.1 14.6 6.2	48	University Speed Limit Not Posted University Speed Limit Not Posted
5th Street New Hampshire Ave. / Rock Creek Church Rd. Hobart Pl. / McMillan Dr. - Howard Pl.	NW NW	4 1	0.4 0.4	Minor Arterial Minor Arterial	25 25	23 36	30 30	27 42	No No	No Yes	Good Good	0/2 2/2	None None	Yes No	Low Low	Residential Monument/Recreational	School No	N/A N/A	8.1 8.1	34	Speed Limit Not Posted; One-Way University; Road Name Change from FCC Rd to Hobart
6th Street Penn. St. / Florida Ave. Florida Ave. / Rhode Island Ave. Rhode Island Ave. / Pennsylvania Ave.	NE NW NW	5/6 1/2 2/6	1.6 0.2 1.4	Minor Arterial Minor Arterial Minor Arterial	25 25 25	31 21 30	25 30 30	35 25 33	No No No	No No No	Good Good Good	1/1 1/1 2/2	None None None	Yes Yes Yes	Low Low Low, High	Commercial Residential Residential, Commercial	School No School	N/A N/A N/A	5.7 4.1 14.6	26	Speed Limit Not Posted Speed Limit Not Posted Speed Limit Not Posted
7th Street Florida Ave. / M St. M St. / New York Ave. New York Ave. / Massachusetts Ave. Massachusetts Ave. / Pennsylvania Ave. Pennsylvania Ave. / Maine Ave.	NW NW NW NW NW/SW	1/2 2 2 2/6 2/6	0.7 0.1 0.1 0.5 0.6	Principal Arterial Principal Arterial Principal Arterial Principal Arterial Principal Arterial	25 25 25 25 25	30 22 22 20 28	30 30 30 30 30	33 27 25 22 33	No No No No No	No No No No No	Good Good Good Good Good	1/1 1/2 1/2 1/2 2/2	Left Left, Right Left, Right Left, Right Left, Right	Yes Yes Yes Yes Yes	Low Low Low Low High	Residential, Commercial Commercial Commercial Commercial Commercial	School No No No No	N/A N/A N/A N/A N/A	18.4 13.0 16.0 15.0 14.6	46	
8th Street Pennsylvania Ave. / Virginia Ave.	SE	6	0.3	Minor Arterial	25	23	30	28	No	No	Good	1/1	None	Yes	Moderate	Commercial	No	N/A	10.7	30	Speed Limit Not Posted
9th Street Brentwood Rd. / Mt. Olivet Rd. - Brentwood Pkwy. Monroe St. / Girard St. V St. / Mt. Vernon Pl. - Massachusetts Ave. Mt. Vernon Pl. - Massachusetts Ave. / E St. E St. / Pennsylvania Ave. Pennsylvania Ave. / Constitution Ave. Constitution Ave. / I-395	NE NE NW NW NW NW/SW	5 5 1/2 2 2 2	0.3 0.4 1.1 0.4 0.1 0.7	Minor Arterial Minor Arterial Minor Arterial Minor Arterial Minor Arterial Freeway/Expressway Freeway/Expressway	25 25 25 25 25 25 35	25 23 29 26 27 27 35	30 25 30 30 30 30 45	29 26 34 31 34 32 49	No No No No No No No	No Yes No No No No No	Good Good Good Good Good Good Good	2/2 1/1 2/2 0/3 0/3 1/4 0/3	None None None None None None None	No Yes Yes Yes Yes Yes No	Low Low Low Moderate Moderate Moderate Low	Commercial Monument/Recreational Residential, Commercial Commercial Commercial Commercial Commercial	School School School No No No No	62-796 62-796 62-796 62-796 62-796 62-796 62-796	18.9 12.7 11.0 18.9 16.9 16.9	37	Speed Limit Not Posted; Bridge Speed Limit Not Posted No Parking in Isolated Areas One-Way, Bus Only Lane, 0/4 Lanes - Mass. to New York One-Way, Bike Lane Two-Way, No Parking on SB One-Way, Tunnel
11th Street Massachusetts Ave. / Pennsylvania Ave. Pennsylvania Ave. / K St. Rhode Island Ave. / Pennsylvania Ave.	NE/SE SE NW	6 6 2	0.5 0.3 1.1	Minor Arterial Minor Arterial Minor Arterial	25 25 25	27 29 28	30 30 25	31 33 33	No No No	No No No	Good Good Fair	1/1 2/2 2/2	None None None	Yes Yes Yes	Low Low Moderate, High	Residential Residential Residential, Commercial	No School No	N/A N/A N/A	6.9 8.8 15.0	30	SE One-Way from Massachusetts to E. Capitol Speed Limit Not Posted; Some Left Turns from F to K
12th Street Expressway I-395 / Southwest Fwy. (Ramp) Southwest Fwy. (Ramp) / 12th St. (Ramp) 12th St. (Ramp) / Constitution Ave.	SW SW NW/SW	2 2 2	0.3 0.1 0.1	Freeway/Expressway Freeway/Expressway Freeway/Expressway	35 30 25	40 42 33	35 35 40	44 46 39	No No No	No No No	Good Good Good	0/2 0/2 0/3	None None None	No No No	Low Low Low	Highway Highway, Bridge/Tunnel Bridge/Tunnel	No No No	87-99 87-99 87-99	20.9 20.9 20.9	0	
12th Street Constitution Ave. / Pennsylvania Ave. Pennsylvania Ave. / Massachusetts Ave. Massachusetts Ave. / M St. Brentwood St. / Lawrence St. Lawrence St. / South Dakota Ave.	NW NW NW NE NE	2 2 2 5 5	0.2 0.6 0.1 0.6 1.1	Minor Arterial Minor Arterial Minor Arterial Minor Arterial Minor Arterial	25 25 25 25 25	28 27 23 28 28	25 25 25 30 30	33 30 28 33 33	No No No No No	No No No No No	Good Good Good Good Good	2/3 0/2 0/1 1/1 1/1	None Left None None None	Yes Yes Yes Yes Yes	Low Low Low Low Low	Commercial Commercial Commercial Residential Commercial	No School No School School	N/A N/A N/A N/A N/A	21.5 15.0 17.0 11.3 10.5	29	Allison to South Dakota - Residential and No Parking
13th Street Webster St. / Rhode Island Ave. Fort Stevens Dr. / Allison St. Allison St. / Kenyon St. Kenyon St. / Florida Ave. Florida Ave. / U St. U St. / O St. O St. / Pennsylvania Ave. Pleasant St. / Ridge Pl.	NE NW NW NW NW NW NW SE	5 4 1/4 1 1 1/2 2 8	0.3 1.4 1.1 0.6 0.3 0.6 1.0 0.4	Minor Arterial Minor Arterial Minor Arterial Minor Arterial Minor Arterial Minor Arterial Minor Arterial Minor Arterial	25 25 25 25 25 25 25 25	28 30 30 31 27 27 29 24	30 30 30 30 30 30 30 25	33 36 33 35 32 31 32 28	No No No No No No No No	Yes No No No No No No No	Good Good Good Good Good Good Good Good	1/1 1/1 1/1 1/1 1/1 2/2 1/1	None None None None None None None None	Yes Yes Yes Yes Yes Yes Yes Yes	Low Low Low Low Low Low High Low	Residential Residential Residential Residential Residential Residential Residential, Commercial Residential	School School School School School School No No	87-99 87-99 87-99 N/A N/A N/A N/A N/A	5.8 20.6 20.5 13.8 13.5 12.6 15.0 5.7	77	2/2: Fort Stevens - Peabody. No P from Missouri-Colorado Multiple Schools "Suicide" Left Turn Lane Logan Traffic Circle Speed Limit Not Posted
14th Street Aspen St. / Monroe St. Monroe St. / Florida Ave. Florida Ave. / S St. S St. / Pennsylvania Ave. Pennsylvania Ave. / Independence Ave.	NW NW NW NW NW/SW	1/4 1 1/2 1/2 2	2.9 0.8 0.4 1.3 0.8	Minor Arterial Minor Arterial Principal Arterial Principal Arterial Principal Arterial	25 25 25 25 25	30 24 26 25 31	30 25 25 25 25	35 29 32 31 38	No No No No No	Yes (15) No No No No	Good Good Good Good Good	1/1 2/2 2/2 2/3 3/4	None None None None Left, Right	Yes Yes Yes Yes No	Low, Moderate High High High High	Residential Commercial Commercial Commercial Monument/Recreational	School School School School No	N/A N/A N/A N/A N/A	13.0 12.8 15.6 32.0 58.0	91	Bike Lane - Longfellow to Monroe Bike Lane - U to S Left Turn from H to K. No Parking from K to Pennsylvania
15th Street Independence Ave. / Alexander Hamilton Pl. Alexander Hamilton Pl. / New York Ave. New York Ave. / K St. I St. / Massachusetts Ave. Massachusetts Ave. / Q St. Q St. / V St. V St. / 16th St.	NW/SW NW NW NW NW NW NW	2 2 2 2 2 1/2 1	0.6 0.2 0.3 0.4 0.3 0.5 0.7	Principal Arterial Principal Arterial Minor Arterial Minor Arterial Minor Arterial Minor Arterial Minor Arterial	25 25 25 30 30 30 25/30	32 22 21 25 25 31 26	25 25 25 30 30 30 20/30	36 26 25 30 35 36 32	No No No No No No No	No No No No No No No	Good Good Good Good Good Good Good	2/2 3/3 0/2 2/2 0/3 0/4 0/1	None None None None None None None	Yes Yes Yes Yes Yes Yes Yes	High High High High High Low Low	Monument/Recreational Commercial Commercial Commercial Commercial Residential Residential, Monument/Rec.	No No No No No No School	N/A N/A N/A N/A N/A N/A N/A	15.0 18.0 9.7 16.0 12.2 9.0 8.3	20	Speed Limit Not Posted; No P from Indep. to Const. & E to Alex. Ham. Speed Limit Not Posted; No P SB Speed Limit Not Posted; One-Way, 2/2 Lanes from New York to H Speed Limit Not Posted Speed Limit Not Posted; One-Way One-Way One-Way, Bike Lane, Conflicting St., Ped Warning Signs
16th Street District Line / Alaska Ave. Alaska Ave. / Somerset Pl. - Luzon Ave. Somerset Pl. - Luzon Ave. / Arkansas Ave. Arkansas Ave. / Irving St. Irving St. / W St. W St. / O St. O St. / K St. K St. / H St.	NW NW NW NW NW NW NW NW	4 4 4 1/4 1 1/2 2 2	1.2 0.6 1.9 0.7 0.7 0.4 0.2 0.2	Principal Arterial Principal Arterial Principal Arterial Principal Arterial Principal Arterial Principal Arterial Principal Arterial Principal Arterial	30 30 30 25 25 25 25 25	40 38 37 33 34 31 25 23	35 35 35 35 35 35 35 35	46 43 44 42 38 35 30 26	No No No No No No No No	No No No No No No No No	Good Good Good Good Good Good Good Good	1/1 1/1 1/1 2/3 2/3 1/1 2/2 1/1	Left Left Left None None None None None	Yes Yes Yes Yes Yes Yes No Yes	Low Moderate Moderate Moderate Moderate Moderate Low, High High	Residential Residential, Monument/Rec. Residential, Monument/Rec. Residential, Monument/Rec. Monument/Recreational Residential, Commercial Commercial Commercial	School No School/Speed School No No School No	N/A N/A N/A N/A N/A N/A N/A N/A	32.1 36.0 32.3 36.7 38.7 25.2 20.1 14.0	72	Median; Left Turn Lane, if No P - then 2/2 Median; Left Turn Lane, if No P - then 2/2 Median; Left Turn Lane, if No P - then 2/2 Reversible Lane 2 Lanes NB, 3 Lanes SB 1/2 from W to New Hampshire Median, Tunnel, Parking and No Median from L to K Speed Limit No Posted; SB Left Turn Lanes at H
17th Street Bladensburg Rd. / Benning Rd. Benning Rd. / Potomac Ave. Potomac Ave. / Barney Cir. Florida Ave. / New Hampshire Ave. New Hampshire Ave. / Massachusetts Ave. Massachusetts Ave. / K St. K St. / E St. E St. / Constitution Ave. Constitution Ave. / Independence Ave.	NE NE/SE SE NW NW NW NW NW	5 6 6 1/2 2 2 2 2 2	0.5 1.2 0.2 0.2 0.5 0.4 0.5 0.2 0.3	Minor Arterial Minor Arterial Minor Arterial Minor Arterial Minor Arterial Minor Arterial Principal Arterial Principal Arterial Principal Arterial	25 25 25 25 25 25 25 25 25	31 31 33 24 22 24 20 30 29	30 30 30 25 25 25 25 25 25	35 35 38 28 26 28 23 35	No No No No No No No No No	No Yes (20) Yes (15) No No No No No No	Good Good Good Good Good Good Good Good Good	2/2 0/2 1/1 0/1 0/2 2/2 2/2 1/2 2/2	None None None None None None None None None	No Yes Yes Yes Yes Yes Yes Yes No	Low Low Low Moderate Moderate Moderate High High High	Residential, Commercial Residential Residential Residential Commercial Commercial Commercial Monument/Recreational Monument/Recreational	No School No No School No No No No	N/A N/A N/A N/A N/A N/A N/A N/A N/A	21.5 4.6 5.0 20.0 20.5 19.0 24.8 17.9 25.1	38	One-Way Cemetery No Parking from Pennsylvania to E

District of Columbia Speed Study

Contract PO-KA 2002-T-0034 (August, 2006)

ROUTE NAME (Begin/End Study Location)	Quadrant	Ward	LENGTH Approx. (Miles)	ROAD CLASSIFICATION	POSTED SPEED (MPH)	MEDIAN SPEED (MPH)	COMFORT SPEED (MPH)	85th PERCENTILE (MPH)	VERTICAL CURVES (Advisory)	HORIZONTAL CURVES (Advisory)	GENERAL PAVEMENT CONDITION	THRU LANES	TURN LANES	ON-STREET PARKING	PEDESTRIAN ACTIVITY	DEVELOPMENT	SPEED ZONES	D.C. LAW or CODE	AAWT	SPEED ACCIDENT DATA	REMARKS
18th Street Virginia Ave. / Connecticut Ave. Connecticut Ave. / Florida Ave. Florida Ave. / Columbia Rd.	NW NW NW	2 2 1	1.0 0.7 0.4	Minor Arterial Minor Arterial Minor Arterial	25 25 25	19 21 22	25 25 25	23 24 28	No No No	No No No	Good Good Good	0/3 1/1 1/2	None None None	Yes Yes Yes	Moderate Moderate Moderate	Commercial Residential, Commercial Commercial	No School School	N/A N/A N/A	8.5 7.8 9.2	24	0/4 Lanes from C to D No Parking from Q to N; 2 SB Lanes from Q to Mass. 2 Lanes NB and 1 Lane SB
19th Street Connecticut Ave. / K St. K St. / E St. Polomac Ave. / Independence Ave. Independence Ave. / C St. C St. / Benning Rd.	NW NW SE NE/SE NE	2 2 6 6 6/7	0.4 0.5 0.3 0.4 0.4	Minor Arterial Minor Arterial Minor Arterial Minor Arterial Minor Arterial	25 25 25 25 25	18 22 33 28 24	25 25 30 30 30	22 26 38 33 27	No No No No No	No No No No No	Good Good Good Good Fair	0/1 0/2 0/3 0/2 0/1	None None None None None	Yes Yes Yes (SB) Yes (SB) Yes (SB)	High High Low Low Low	Commercial Commercial Residential Residential Residential	No No No School School	N/A N/A N/A N/A N/A	13.6 10.0 5.0 4.6 4.0	26	One-Way, Speed Limit Not Posted; 0/2 Lanes from Connecticut to N One-Way, Right Turn Lane at E Stadium
20th Street Virginia Ave. / E St. E St. / New Hampshire Ave.	NW NW	2 2	0.1 0.8	Minor Arterial Minor Arterial	25 25	16 22	25 25	21 25	No No	No No	Good Good	0/3 0/2	None None	No Yes	High High	Commercial Commercial	No No	N/A N/A	18.2 18.0	9	Speed Limit Not Posted, One-Way Speed Limit Not Posted, One-Way, No Parking from H to Pennsylvania
22nd Street Pennsylvania Ave. / Massachusetts Ave. C St. / East Capitol St. East Capitol St. / Independence Ave.	NW NE SE	2 6/7 7	0.7 0.2 0.1	Minor Arterial Minor Arterial Minor Arterial	25 25 25	24 32 33	25 40 40	28 37 37	No No No	No No No	Good Good Good	0/2 0/3 0/2	None Right None	Yes (NB) No No	Moderate Low Low	Commercial Recreational Recreational	No No No	N/A N/A N/A	14.3 26.7 32.0	10	Speed Limit Not Posted, One-Way Speed Limit Not Posted Speed Limit Not Posted
23rd Street Q St. / Pennsylvania Ave. Pennsylvania Ave. / Lincoln Cir.	NW NW	2 2	0.7 0.9	Principal Arterial Principal Arterial	25 25	22 30	30 30	26 33	No No	Yes No	Good Good/Fair	0/2 2/2	None None	Yes Yes	Low Low, High	Residential Residential, Monument/Rec.	School No	N/A N/A	16.6 20.0	11	Speed Limit Not Posted, One-Way, No P on Left from Q to L Speed Limit Not Posted, University, 3/3 Lanes & No P from Const. to Lin. Cir.
25th Street Naylor Rd. / Alabama Ave. District Line / Savannah St. Minnesota Ave. / Naylor Rd.	SE SE SE	7/8 8 7/8	0.3 0.1 0.3	Minor Arterial Minor Arterial Minor Arterial	25 25 25	28 18 28	30 25 30	31 22 31	No No No	No Yes (15) No	Good Good Fair	1/1 1/1 0/1	Left None None	Yes Yes Yes	Low Low Low	Residential Residential Residential	School No No	N/A N/A N/A	20.2 20.2 5.8	8	Speed Limit Not Posted One-Way SB
27th Street Pennsylvania Ave. / Texas Ave. Texas Ave. / Naylor Rd.	SE SE	7 7	0.3 0.1	Minor Arterial Minor Arterial	25 25	28 31	30 35	33 39	No No	No No	Good Good	1/1 0/1	None None	Yes No	Low Low	Residential Monument/Recreational	No No	N/A N/A	6.8 6.8	6	SB Left Turn at Texas; NB Left Turn at Pennsylvania One-Way (NB)
34th Street Massachusetts Ave. / Woodley Rd. Woodley Rd. / Quebec St. - Quebec Rd.	NW NW	3 3	0.5 0.5	Minor Arterial Minor Arterial	25 25	26 27	30 30	30 31	No No	No No	Good Good	1/1 1/1	None L (Bi-Dir)	Yes (NB) No	Low Low	Residential Residential	School School	N/A N/A	10.2 16.7	8	SB Left Lane from Cleveland to Woodley Int. W. Sign (20); NB, SB Left Lanes from Porter to Quebec
41st Street District Line / Military Rd.	NW	3	0.3	Minor Arterial	25	29	30	33	No	No	Fair	1/1	None	Yes (NB)	Low	Residential	School	N/A	7.4	3	
63rd Street District Line / District Line	NE	7	0.1	Minor Arterial	25	29	25	35	No	Yes (15)	Good	1/1	None	Yes	Low	Residential	No	N/A	N/A	5	