FEATURE 118
HPMS

Roadway Side	Allows Tie	LRS Package	Feature Type	Interlocking	Secured
C	Yes	No	Length	Yes	Yes
Responsible Party for Data Collection	District Planning				

Definition/Background: The Highway Performance Monitoring System (HPMS) is submitted to FHWA annually on the status of the public road network. Characteristics within this feature are only used for HPMS Sampling of the network. HPMS Samples are selected based on the strata of Functional Classification, Urban Size, Urban Area, and Traffic Volume Group. The HPMS Sample Panel is statistically representative of the entire network.

HPMS Sample Number and Type

The location and existence of the HPMS Sample is determined by coding the HPMSID Number and the HPMS Sample Type. Samples need to begin and end at physical locations that can be found in the field. The preferred practice is to use intersections or structures. However, there may be a need to use alternative locations on limited access or rural roadways such as changes in the number of lanes. Detailed instructions are included in the Chapter 4: Data Collection Process or contact the TDA HPMS Coordinator for assistance.

HPMSIDNO | HPMS SAMPLE ID NUMBER

HPMS	MIRE	Who/What uses this Information	Required For	Offset Direction	Offset Distance
Primary Key	N/A	FHWA	All HPMS standard samples and all donut samples.	N/A	N/A

Definition/Background: Denotes the 12-digit number uniquely identifying the sample section. This number cannot be changed once assigned by the HPMS Coordinator (TDA).

How to Gather this Data: Identify and record the unique HPMS ID number, 12-digit number.

HPMS ID NUMBER

99-000-010-1275
990900010025

Even if a roadway section that contains a sample is renumbered, the HPMS ID number will remain the same. Since when created, the HPMS ID uses the first eight digits of the roadway ID, the two numbers will no longer share those eight digits in common.

Special Situations: All characteristics for samples in Feature 118 should be coded to the same milepoints as HPMSIDNO.

All samples are permanent except in the following cases:

- The roadway becomes functionally classified as a rural minor collector, rural local, or urban local.

- The roadway is physically removed.
- As determined by the sample adequacy software.

Value for HPMS Sample ID Number: 12 Bytes: XXXXXXXXXXXX—Record the 12-digit HPMS ID number

LOADTDEV | HPMS SAMPLE TYPE

HPMS	MIRE	Who/What uses this Information	Required For	Offset Direction	Offset Distance
N/A	N/A	HPMS Coordinator (TDA)	HPMS samples to address under sampling or samples totally on structures or the sample will remain stationary. Effective August 2017.	N/A	N/A

Definition/Background: HPMS Sample Type indicates the situation where a sample requires additional review by Central Office when changes are made and is coded by either Central Office or the District.

HPMS Sample Type

How to Gather this Data: Compare the sample milepoints to the structure milepoints and record code 2 if the sample milepoints are inside of the structure milepoints. Verify the BRIDGENO in Feature 258. Stationary samples will be coded 3 by TDA when a sample is selected to address a unique sample adequacy issue. Stationary samples can begin or end at an administrative feature, including urban boundaries, traffic flow breaks, and changes in number of lanes.

If any of the sample milepoints are outside of the structure milepoints or the sample is not stationary, do not input a value for HPMS Sample Type.

Special Situations: When roadway changes are made that require sample milepoint adjustments on stationary samples the sample must be checked against the sample adequacy in the FHWA HPMS software.

Codes	Descriptions
2	Sample totally on structure
3	Stationary sample (Effective August 2017)

Intersections

There are three types of At Grade Intersections Other, Stop and Signal.

All examples have been updated to reflect the changes to coding multiple entrances to large facilities. Effective September 2019.

ATGROTHR | OTHER OR NO CONTROL AT-GRADE INTERSECTIONS

HPMS	MIRE	Who/What uses this Information	Required For	Offset Direction	Offset Distance
33	80, 144	FHWA	HPMS standard samples on partial or no access control.	N/A	N/A

Definition/Background: Denotes the number of intersections without stop signs and traffic signals for each sample.

Cross-Reference/Tolerance: 1

How to Gather this Data: Code for both sides of the roadway.

Include the last intersection on a sample and not the first one.

Include all at grade others for facilities with multiple entrances and exits. Effective September 2019.

Include the intersection in your count if:

- It has no controls (i.e., no stop signs or signals that cycles red, yellow and green); “or”
- It ends at the sample intersection centerline; “or”
- It has a local street name signage; “or”
- It has two opposing side roads separated by 50 feet or less along the sample; “or”
- It is from an apartment complex, shopping center, or other facility regardless if signed or gated; “or”
- It has the capabilities of a full three-cycle light (red, yellow, green) but is predominantly used as a flashing yellow light “or”
- It has a flashing yellow light; “or”
- It is a round-about.

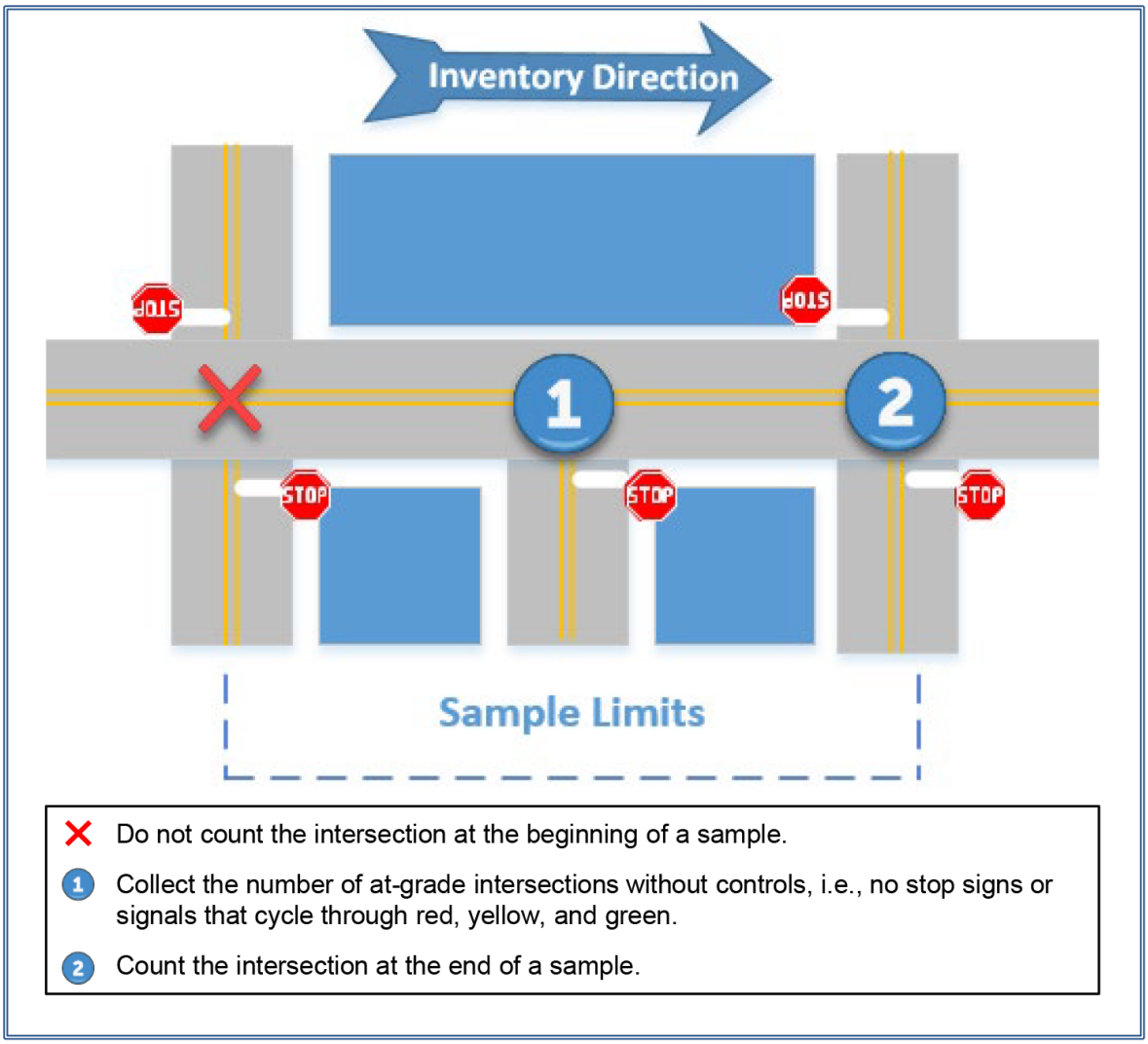
Special Situations: Do not include an intersection in the count under any of the following conditions:

- It is private (e.g., dirt road with no sign).
- It is at the beginning point of a sample.

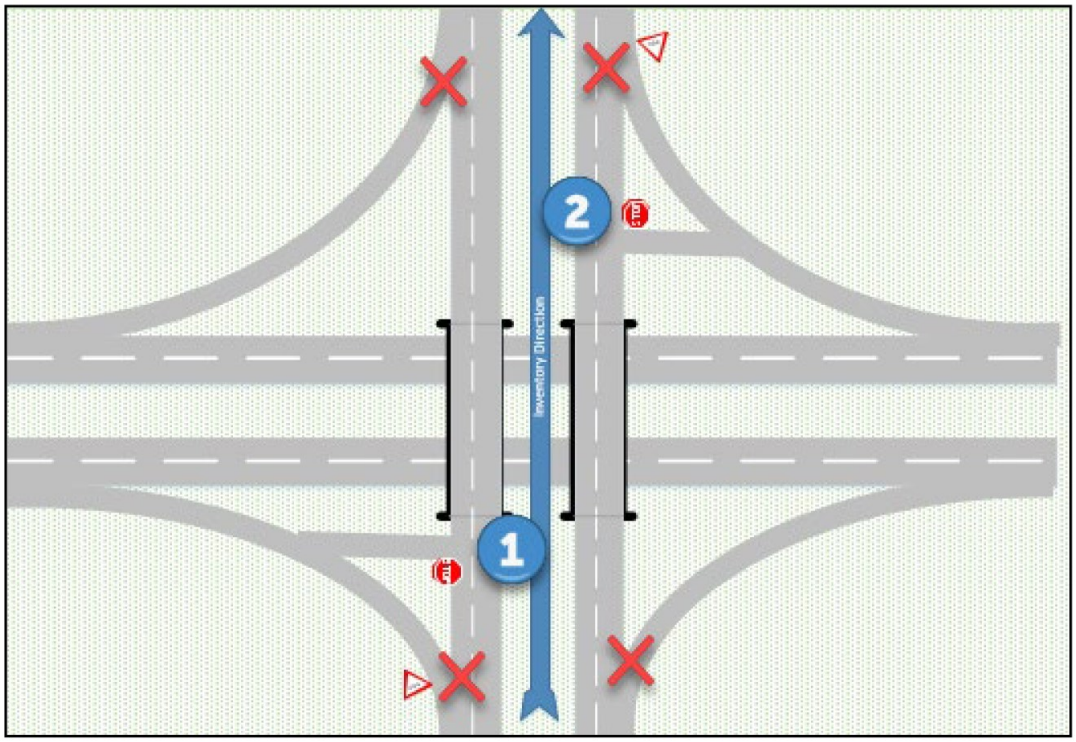
- It is a grade-separated highway (e.g., I-95). Usually the roadway spans over another via bridge and the ramps to the highway intersections are not at-grade.
- It is a yield such as a ramp, exit, or turn bay.
- It is a driveway for one or two businesses or dwellings and has a stop sign.
- It is a mid-block pedestrian crossing.

Value for Other or No Control At-grade Intersections: 2 Bytes: XX—Number of intersections as defined, e.g., 03

AT-GRADE OTHER INTERSECTIONS (IN GENERAL)



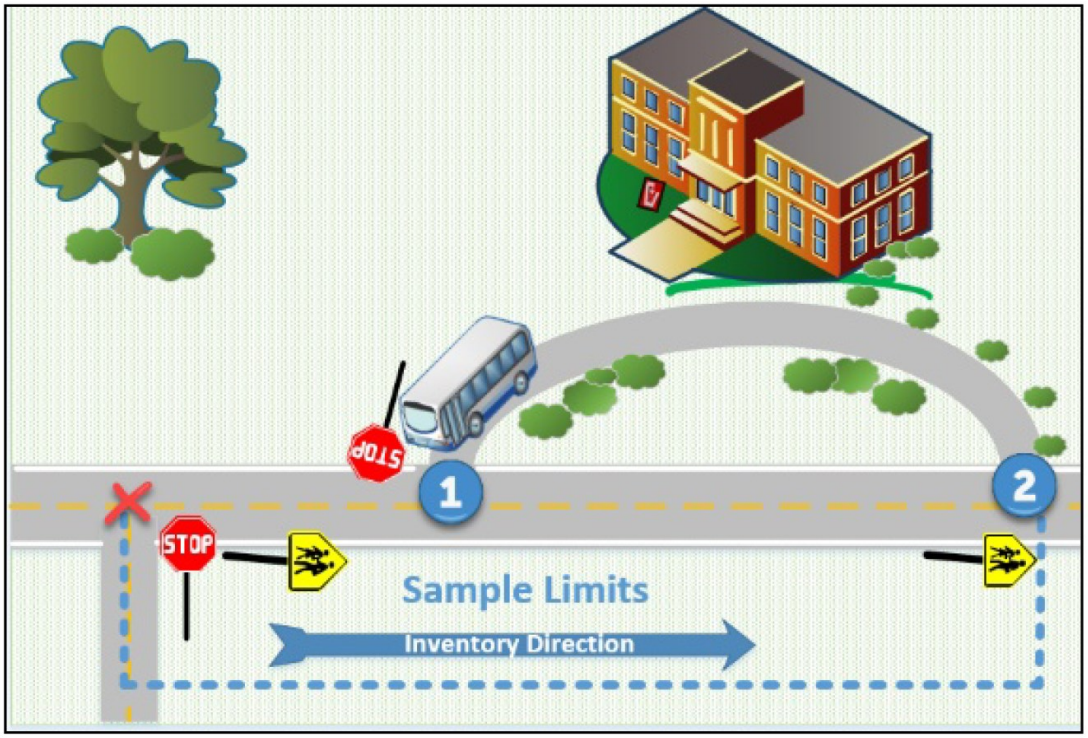
INTERSECTIONS ON ROADWAYS AT INTERCHANGES



✕ Do not count ramps that intersect with yield into a sample as an at-grade intersection.

1 2 These are at-grade other intersections.

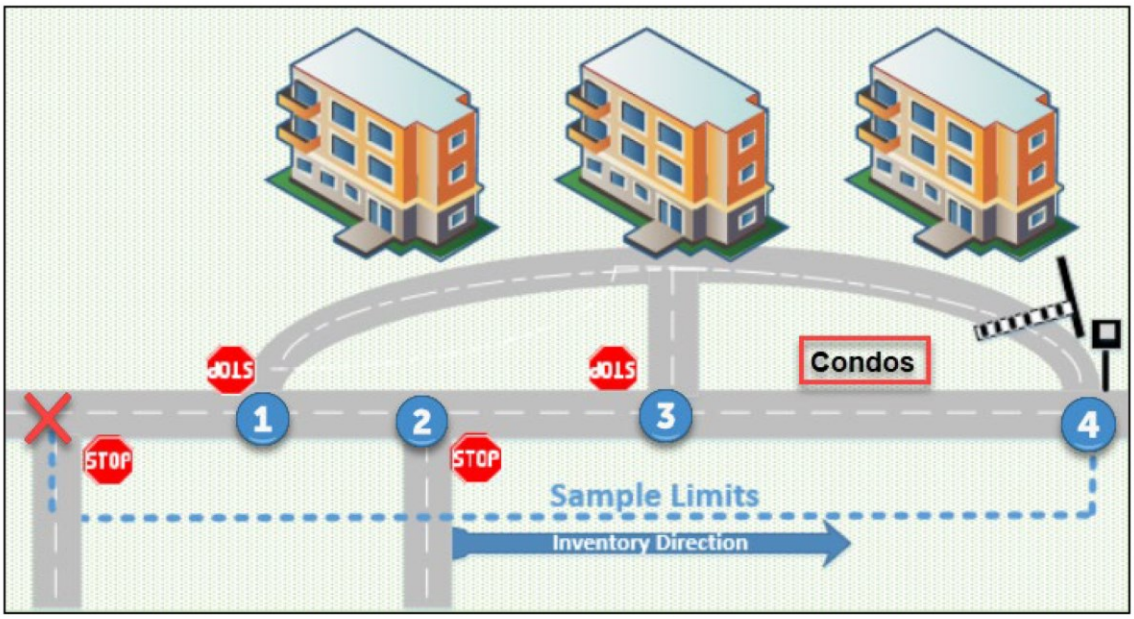
INTERSECTIONS AT SCHOOLS



✕ Do not count the first intersection as an at-grade intersection.

1 2 These are intersections at the school. Both are counted.

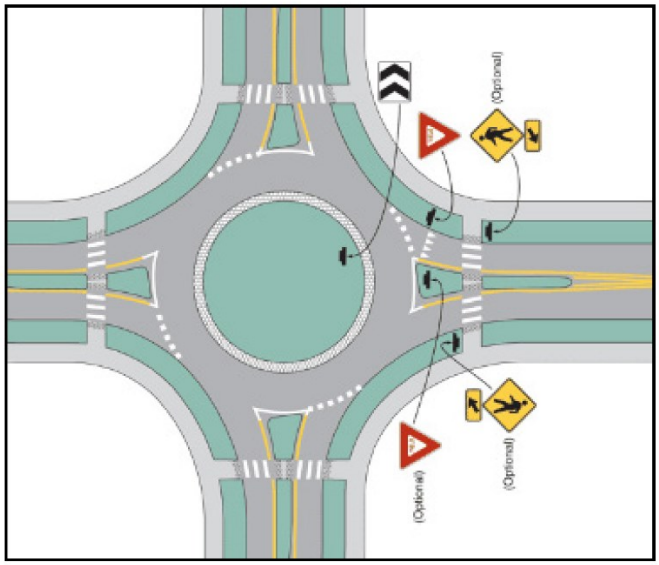
INTERSECTIONS AT APARTMENT COMPLEXES, CONDOS, AND OTHER LIKE SCENARIOS



✕ Do not count the first intersection as an at-grade intersection.

1 2 3 4 These are counted as at-grade other intersections. Collect all intersections at apartment complexes, schools, public buildings, even if there is a gate to restrict access to authorized persons only.

ROUNDABOUT INTERSECTIONS



These are counted as at grade others.

ATGRSIG | SIGNALS AT-GRADE INTERSECTIONS

HPMS	MIRE	Who/What uses this Information	Required For	Offset Direction	Offset Distance
31	78, 144	FHWA	HPMS standard samples on partial or no access control.	N/A	N/A

Definition/Background: Denotes the number of signalized at-grade intersections.

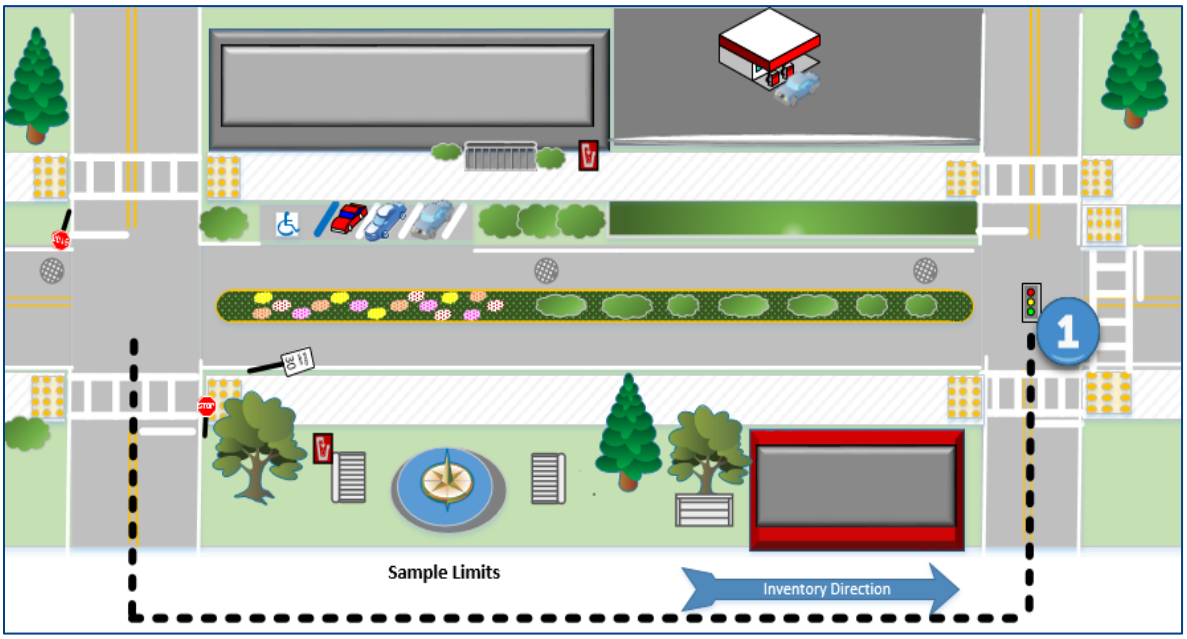
How to Gather this Data: Identify the number of at-grade intersections that have signals must cycle through red, yellow, and green. Code both sides of roadway. Include the last intersection on a sample and not the first one.

Special Situations: Do not include an intersection in the count under any of the following conditions:

- The intersection has the capabilities of a full three-cycle light (red, yellow, green) that is predominantly used as a flashing yellow light.
- The intersection exists for emergency vehicles (e.g., at fire stations).
- The intersection is at the beginning point of a sample.
- The cross traffic is non-vehicular:
  - Mid-block signals for pedestrian crossings
  - Draw bridge signal for boat crossings

Value for Signals at At-grade Intersections: 2 Bytes: XX—Number of intersections as defined, e.g., 03

EXAMPLE



SIGPREV | PREVAILING TYPE OF SIGNALIZATIONS

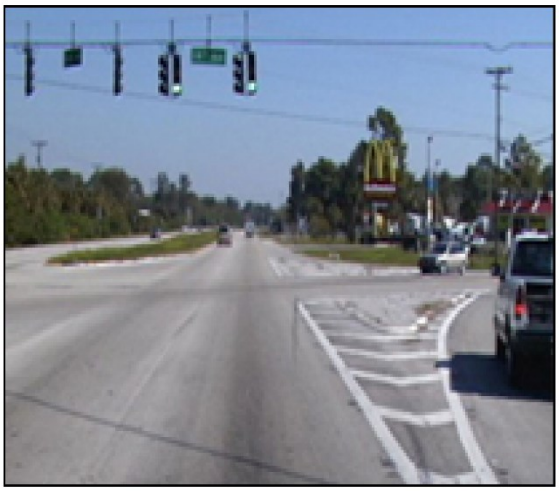
HPMS	MIRE	Who/What uses this Information	Required For	Offset Direction	Offset Distance
29	122	FHWA	HPMS standard samples on urban roadways with signals; optional for rural standard samples.	N/A	N/A

Definition/Background: Denotes how traffic lights are triggered.

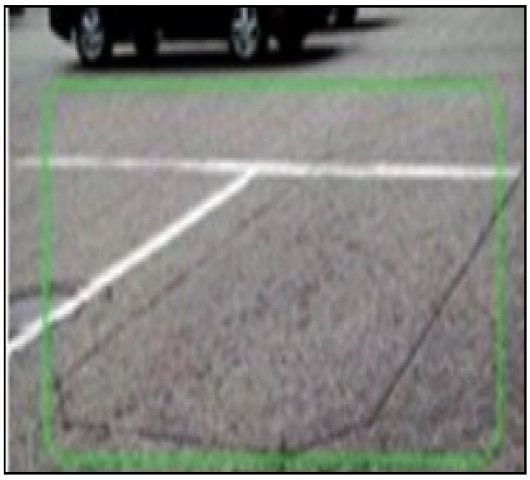
How to Gather this Data: Observe in field or contact local traffic engineering personnel. Record both sides of roadway.

Codes	Descriptions
1	Uncoordinated Fixed Time (may include pre-programmed changes for peak or other time periods)
2	Uncoordinated Traffic Actuated (in inventory direction)
3	Coordinated Progressive (coordinated through several intersections)
4	Coordinated Real-time Traffic Adaptive (computer systems used to update timing plans continuously)
9	No signal systems exist

EXAMPLES



1: Uncoordinated Fixed Time



2: Uncoordinated Traffic Actuated

3: Coordinated Progressive

4: Coordinated Real-time Traffic Adaptive

ATGRSTOP | STOP SIGNS AT-GRADE INTERSECTIONS

HPMS	MIRE	Who/What uses this Information	Required For	Offset Direction	Offset Distance
32	79	FHWA	HPMS standard samples on partial or no access control.	N/A	N/A

Definition/Background: Denotes the number of at-grade intersections with either stop signs or flashing red lights.

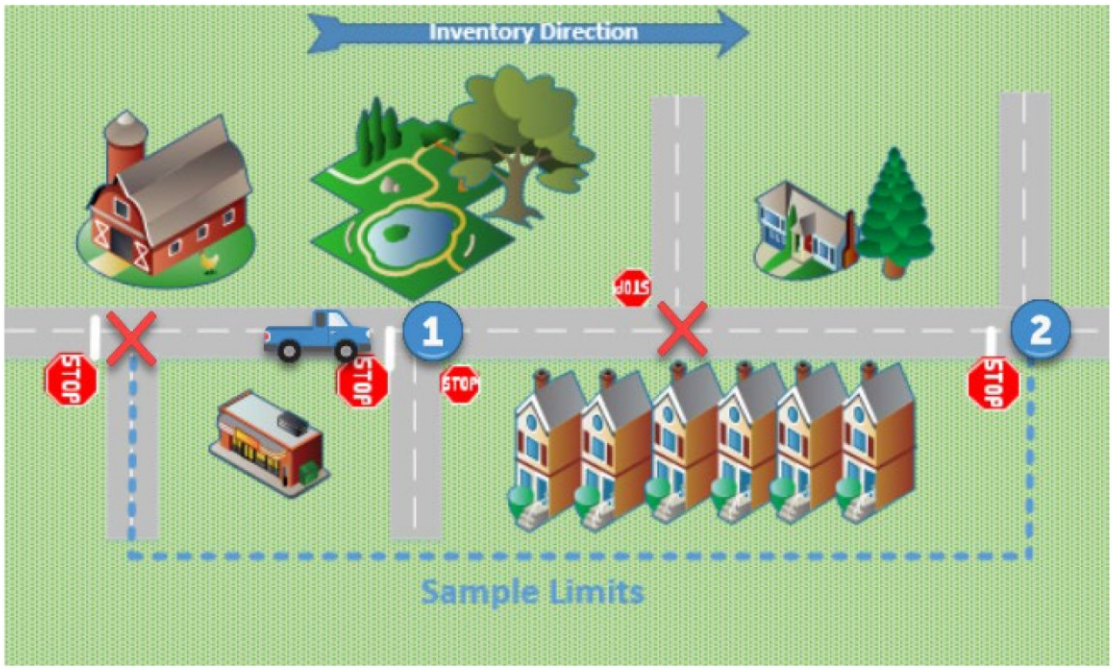
How to Gather this Data: Identify the number of at-grade intersections that have stop signs or flashing red signals controlling the route being inventoried. Include the last intersection on a sample and not the first one.

Special Situations: Do not include an intersection in the count under any of the following conditions:

- If the stop sign is on an intersecting roadway and not on the roadway being inventoried.
- If the flashing light is yellow on the roadway being inventoried.
- If an intersection is at the beginning point of a sample.
- It is a mid-block pedestrian crossing.

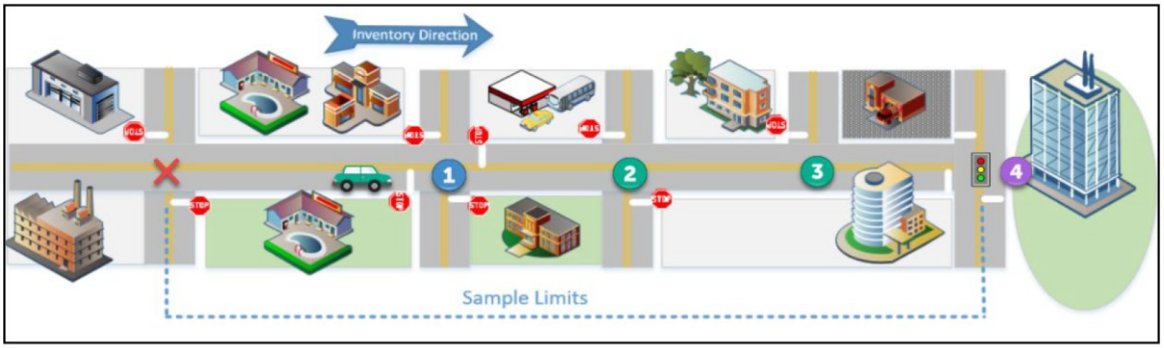
Value for Stop Signs at At-grade Intersections: 2 Bytes: XX—Number of intersections as defined, e.g., 03

AT-GRADE STOP INTERSECTIONS



- ✕ Do not count the first intersection as an at-grade intersection.
- (1) Include an at-grade stop intersection, when the vehicle must come to a stop on the sample.
- ✕ Do not count an intersection as an at-grade stop when the vehicle does not stop on the sample.
- (2) Include the last intersection if it is also an at-grade stop when the vehicle must come to a stop on the sample.

EXAMPLE | ALL AT GRADE INTERSECTION TYPES (SIGNAL, STOP, AND OTHER)



- ✕ Do not count the first intersection at the beginning of the sample.
- 1 At-Grade Stop—the intersection has a stop sign and/or flashing red signal. On the Sample, vehicles must stop before continuing through the intersection.
- 2 At-Grade Other—the intersection does not have stop signs, flashing red signals, nor a signal that cycles through green, yellow, red.
- 3 At-Grade Other—Another one (same as #2).
- 4 At-Grade Signal—the intersection has a signal that cycles through green, yellow, red.

Below are some examples that are **NOT** At-Grade Intersections.

Pedestrian Crossings not associated with an intersection, with or without signage or signals to stop vehicles are not At-Grade Intersections.

A signal for a drawbridge that stops through traffic to allow vessels to navigate the channel past the structure is not an At-Grade Intersection.

TURNLANL | TURN LANE LEFT

HPMS	MIRE	Who/What uses this Information	Required For	Offset Direction	Offset Distance
13	N/A	FHWA	HPMS standard samples on urban roadways unless there are no intersections coded in ATGRSIG, ATGRSTOP, or ATGROTHR.	N/A	N/A

Definition/Background: Denotes type of left turn lane.

How to Gather this Data: Only code this characteristic for samples with intersections. Record the code for turn lanes at a signalized or stop sign intersection that is critical to the flow of traffic; otherwise enter the code that best describes the peak-hour turning lane situation for typical at-grade intersections on that sample. **Record right side of roadway only, in the inventory direction.**

Special Situations: Do not code this characteristic if there are no intersections for the sample.

Codes	Descriptions
1	Multiple turning lanes/bays exist
2	Continuous left turn lane
3	Single left turn lane/bay
4	No left turn lanes/bays exist (intersections exist with left turns permitted)
5	No left turn allowed during peak

EXAMPLES

Turns permitted; multiple exclusive left turn lanes exist. Through movements are prohibited in these lanes. Multiple turn lanes allow for simultaneous turns from all turn lanes.

1: Multiple turning lanes/bays exist

Turns permitted; a continuous left turn lane exists from intersection to intersection. Through movements are prohibited in this lane.

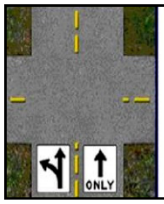
2: Continuous left turn lane

Turns permitted; a single exclusive left turn lane exists.

3: Single left turn lane/bay

U-Turns permitted, a single exclusive left turn lane exists.

3: Single left turn lane/bay. Effective September 2019.



Turns permitted; no exclusive left turn lanes exist

4: No left turn lanes/bays exist (Intersections exist with left turns permitted)

No left turns are permitted during the peak period.

5: No left turn allowed during peak

TURNLANR | TURN LANE RIGHT

HPMS	MIRE	Who/What uses this Information	Required For	Offset Direction	Offset Distance
12	N/A	FHWA	HPMS standard samples on urban roadways unless there are no intersections coded in ATGRSIG, ATGRSTOP, or ATGROTHR.	N/A	N/A

Definition/Background: Denotes type of right turn lane.

How to Gather this Data: Only code this characteristic for samples with intersections. Record the code for turn lanes at a signalized or stop sign intersection that is critical to the flow of traffic; otherwise enter the code that best describes the peak-hour turning lane situation for typical at-grade intersections on that sample. **Record right side of roadway only in the inventory direction.**

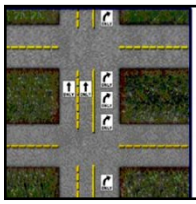
Special Situations: Do not code this characteristic if there are no intersections for the sample.

Codes	Descriptions
1	Multiple turning lanes/bays exist
2	Continuous right turn lane
3	Single right turn lane/bay
4	No right turn lanes/bays exist (intersections exist with right turns permitted)
5	No right turn allowed during peak

EXAMPLES

Turns permitted; multiple exclusive right turn lanes exist. Through movements are prohibited in these lanes. Multiple turn lanes allow for simultaneous turns from all turn lanes.

1: Multiple turning lanes/bays exist

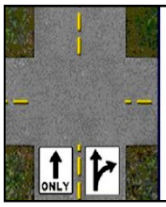


Turns permitted; a continuous right turn lane exists from intersection to intersection. Through movements are prohibited in this lane.

2: Continuous right turn lane

Turns permitted; a single exclusive right turn lane exists.

3: Single right turn lane/bay



Turns permitted; no exclusive right turn lanes exist

4: No right turn lanes/bays exist (Intersections exist with right turns permitted)

No right turns are permitted during the peak period.

5: No right turn allowed during peak

Curves, Grades, Sight Distance, and Terrain

Curves by Class, Grades by Class, Passing Sight Distance, and Terrain are used to indicate the general roadway alignment.

CURCLASX | CURVES BY CLASS (X=A-F)

HPMS	MIRE	Who/What uses this Information	Required For	Offset Direction	Offset Distance
43	N/A	FHWA	HPMS standard samples on paved rural principal and minor arterials and urban principal arterials.	N/A	N/A

Definition/Background: Denotes the length of curves for a sample. The horizontal degree of curvature can be obtained from Feature 221 in RCI or by reviewing construction plans. A curve class C with a curvature of 5°30' would have a HRZDGCRV Feature 221 with an English value of 005D30'00.00." For further information on reading the curve data from plans, contact the Construction Office for assistance and training.

Characteristic	Horizontal Degree of Curvature
CURCLASA	0°00'–3°29'
CURCLASB	3°30'–5°29'
CURCLASC	5°30'–8°29'
CURCLASD	8°30'–13°59'
CURCLASE	14°00'–27°59'
CURCLASF	28°00' and above

Important When Gathering: The sum of all curves must equal the length of the sample.

How to Measure: Each curve is classified by its degrees into a range class, e.g., CURCLASA-F. The measured length is summed for all matching curves and coded for the appropriate CURCLASx. The sum of all CURCLASx will equal the sample length. When a curve begins or ends outside of a sample, only count the portion of the curve inside of the sample.

How to Gather this Data: Record the curvature as a seven-digit number. Code 01 as a placeholder for positions 1 and 2. Code the miles in positions 3-7 without a decimal. CURCLASB—0102745 is a curve between 3°30' to 5°29' for 2.745 miles. **Only code right side of roadway**.

Special Situations: Do not count quantity of curves.

Value for Curve Class: 7 Bytes: 01XXXXX—(e.g., 0102745 is 2.745 miles)

GRACLASX | GRADES BY CLASS (X=A-F)

HPMS	MIRE	Who/What uses this Information	Required For	Offset Direction	Offset Distance
45	203	FHWA	HPMS standard samples on paved rural principal and minor arterials and urban principal arterials.	N/A	N/A

Definition/Background: Denotes the degree of roadway grade, vertical slope of roadway segment.

Important When Gathering: The sum of all grades must equal the length of the sample.

How to Gather this Data: Collected from construction plans where possible. If the RCI input screen requires the first two digits to be coded, use 01. The last five digits should be the total length of the grades in miles, e.g., GRACLASA with a value of 0101235 is grade class A for 1.235 miles.

Characteristic	Percent of Grade
GRACLASA	0.0%–0.4%
GRACLASB	0.5%–2.4%
GRACLASC	2.5%–4.4%
GRACLASD	4.5%–6.4%
GRACLASE	6.5%–8.4%
GRACLASF	8.5% and above

Record the length as a seven-digit number with three decimal places. The last five digits should be the total length of the grades in miles, e.g., GRACLASA with a value of 0101235 is grade class A for 1.235 miles using 01 as a placeholder for the first two digits. When a grade begins or ends outside of a sample, only count the portion of the grade that is within the sample section. The sum of all grade lengths should be equal to the total length of the sample section. **Only code right side of roadway**.

Special Situations: Do not count quantity of grades.

Value for Grade Class: 7 Bytes: 01XXXXX—(e.g., 0101235 is 1.235 miles)

SIT1500 | % OF PASSING SIGHT DISTANCE >=1500 FEET

HPMS	MIRE	Who/What uses this Information	Required For	Offset Direction	Offset Distance
46	108	FHWA	HPMS standard samples on rural, paved two-lane sample sections.	N/A	N/A

Definition/Background: Denotes percent of roadway with adequate sight-distance for passing. Only code for two-lane paved rural roadways in the inventory direction (Dec 2018).

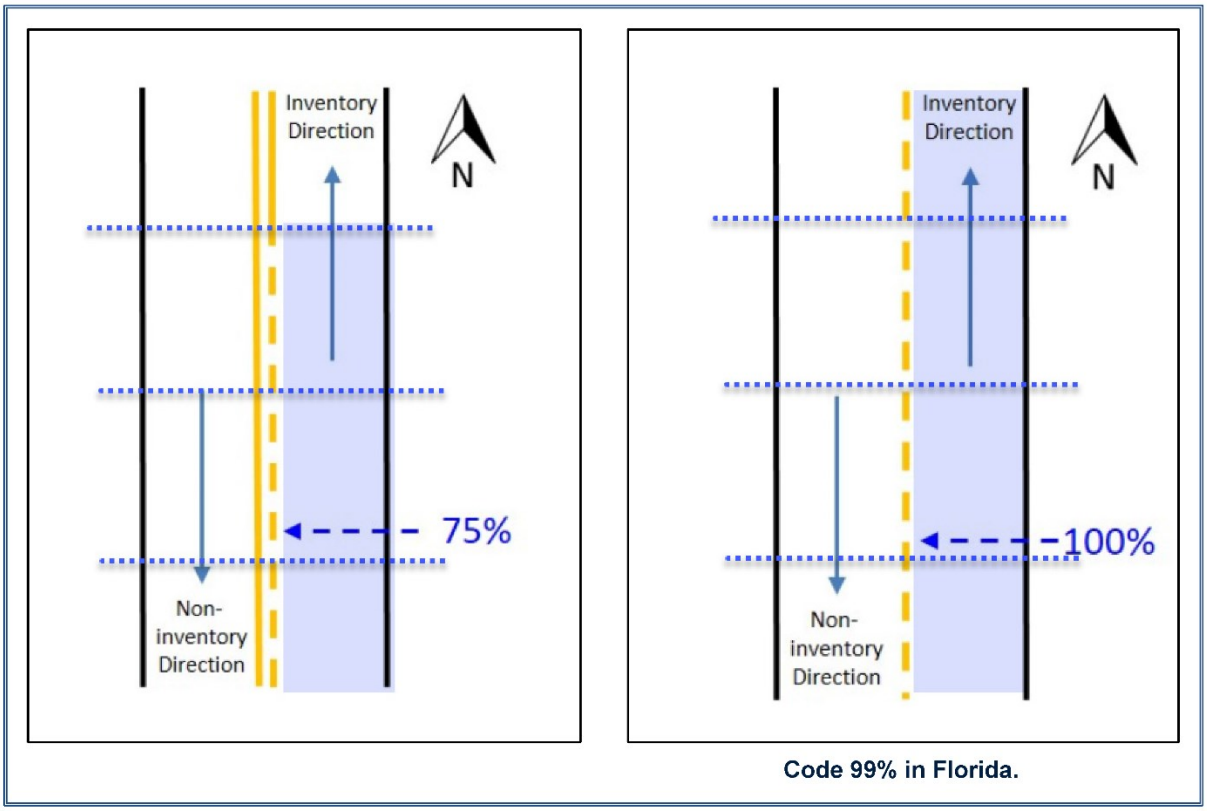
How to Gather this Data: Record the percent of the section length that has a passing sight distance of 1,500 feet or more as indicated by the striping on the roadway in the inventory direction. Use the Distance Measuring Instrument (DMI) or measuring wheel to measure the sight distance. Effective September 2019.

Code the percentage to the nearest ten percent for the sample. Code 0 for non-applicable sections such as very curved or very hilly sections without passing zones.

Special Situations: Codes 99 for 100 percent on samples because this is a two-digit field.

Value for Percentage of Passing Sight Distance: 2 Bytes: XX—Record percentage 00-99 percent, e.g., 30 for 30 percent

SIT1500 EXAMPLES



Source: FHWA Office of Operations.

TERRAIN | TYPE OF LAND TERRAIN

HPMS	MIRE	Who/What uses this Information	Required For	Offset Direction	Offset Distance
44	77	FHWA	HPMS standard samples on rural roadways.	N/A	N/A

Definition/Background: Denotes whether a roadway segment is rolling or flat. The code of rolling refers to areas, i.e., North Carolina and West Virginia, where large semi-trucks are not able to maintain normal highway speeds on hills.

How to Gather this Data: Code 1 for flat, 2 for rolling terrain. Rolling terrain is where large trucks have to reduce their speed substantially below that of cars. Record both sides of roadway.

Mountainous Terrain

Codes	Descriptions
1	Level
2	Rolling

Note: Florida does not have Mountainous Terrain—it is shown to emphasize what that might look like with warning signage.

Peak Lanes, Parking, Widening Obstacles and Widening Potential

PEAKLANE | NUMBER OF LANES IN PEAK DIRECTION IN PEAK HOUR

HPMS	MIRE	Who/What uses this Information	Required For	Offset Direction	Offset Distance
10	43	FHWA	All HPMS standard samples.	N/A	N/A

Definition/Background: Denotes the number of lanes flowing in peak direction during peak traffic hours.

How to Gather this Data: Identify and record the number of lanes that flow in the peak direction during the peak hours of traffic flow. Include reversible lanes, parking lanes, or shoulders that are legally used for through traffic, whether for Single Occupancy Vehicle (SOV) or High Occupancy Vehicle (HOV) operation. This includes the associated managed lanes in the peak direction. Effective September 2019.

- On urban roadways, code the peak direction.
- On rural roadways (2 or 3 lanes), code both directions.
- On rural roadways (4 lanes), code the peak direction.

Special Situations: Peak direction may be different than the normal inventory direction.

Codes	Descriptions
1	One lane
2	Two lanes
3	Three lanes
4	Four lanes
5	Five lanes
6	Six Lanes
7	Seven Lanes
8	Eight Lanes
9	Nine Lanes

TYPEOP | TYPE OF PARKING

HPMS	MIRE	Who/What uses this Information	Required For	Offset Direction	Offset Distance
40	100, 101	FHWA	HPMS standard samples on urban roadways that predominantly have parking within the through lanes or on paved shoulders during the peak hour.	N/A	N/A

Definition/Background: Provides specific information about the presence of peak parking on urban sample roadway sections. It is used in investment requirements modeling to calculate capacity.

How to Gather this Data: Enter the code that best reflects the predominant type of peak hour parking that exists within the sample. Parking may be within the through lanes or on the paved shoulders.

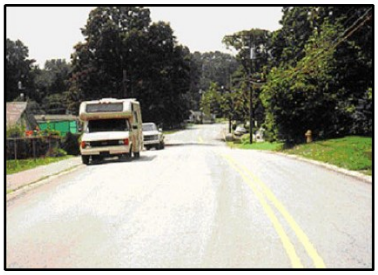
Do not include parking if it exists beyond the paved shoulder.

Do not include parking if parking spaces are used as through lanes or turning lanes during the peak hour.

Do not include parking on limited access facilities, such as interstates, freeways, and expressways.

Codes	Descriptions
1	Parking Permitted One Side
2	Parking Permitted Both Sides
3	No Parking Allowed

EXAMPLES



1: Parking Permitted One Side

2: Parking Permitted Both Sides

3: No Parking Allowed

WIDOBST | WIDENING OBSTACLES

Definition/Background: Obstacle to roadway widening within **100 feet** of the edge of the through lanes, which are present in either direction on the side of the section. See below for additional definition for each characteristic.

HPMS	MIRE	Who/What uses this Information	Required For	Offset Direction	Offset Distance
41	N/A	FHWA	All HPMS standard samples.	N/A	N/A

How to Gather this Data: Look for and code all conditions that apply in either direction, on either side. At least one of the characteristics WIDOBSTA-G should be coded if less than 9 lanes could be added, total for both sides of the roadway, at the most restrictive point. Effective September 2019.

Only characteristic WIDOBSTX should be coded if 9 or more lanes could be added, total for both sides of the roadway, at the most restrictive point.

Special Situations: Multiple WIDOBSTA-G are allowed, but if WIDOBSTX is coded, none of the others may be coded. The existence of a structure such as a bridge, tunnel, or underpass impacts the cost to widen the roadway and is an obstacle. Effective September 2019. For example, they may exist for other major transportation facilities (WIDOBSTB); or to cross environmentally sensitive areas (WIDOBSTF) or for terrain restrictions (WIDOBSTD).

Code	Description
1	Yes

WIDOBSTA | WIDENING OBSTACLES | DENSE DEVELOPMENT

Includes density and size of building to be acquired, number of people to be relocated, and the number of businesses to be acquired. Consider obstacles relative to the urban area where the sample is located.

WIDOBSTB | WIDENING OBSTACLES | MAJOR TRANSPORTATION FACILITIES

Includes major rail lines, canals, airports, and major natural gas and oil pipelines.

WIDOBSTC | WIDENING OBSTACLES | OTHER PUBLIC FACILITIES

Includes hospitals, museums, major public office buildings, military bases, schools, and universities.

WIDOBSTD | WIDENING OBSTACLES | TERRAIN RESTRICTIONS

Includes geographic features requiring significant excavation, fill, or tunneling.

WIDOBSTE | WIDENING OBSTACLES | HISTORIC OR ARCHAELOGICAL SITES

Includes historic buildings, historic land, large monuments, cemeteries, and other known archeological sites.

WIDOBSTF | WIDENING OBSTACLES | ENVIRONMENTALLY SENSITIVE AREAS

Includes scenic landmarks, wetlands, bodies of water, canals, areas with protected species, and designated scenic routes and byways.

WIDOBSTG | WIDENING OBSTACLES | PARKLAND

Includes National, State, and local parks.

WIDOBSTX | WIDENING OBSTACLES | NONE (ROAD CAN BE WIDENED)

No obstacles present.

WIDPOTNL | WIDENING POTENTIAL LANES

HPMS	MIRE	Who/What uses this Information	Required For	Offset Direction	Offset Distance
42	N/A	FHWA	All HPMS standard samples.	N/A	N/A

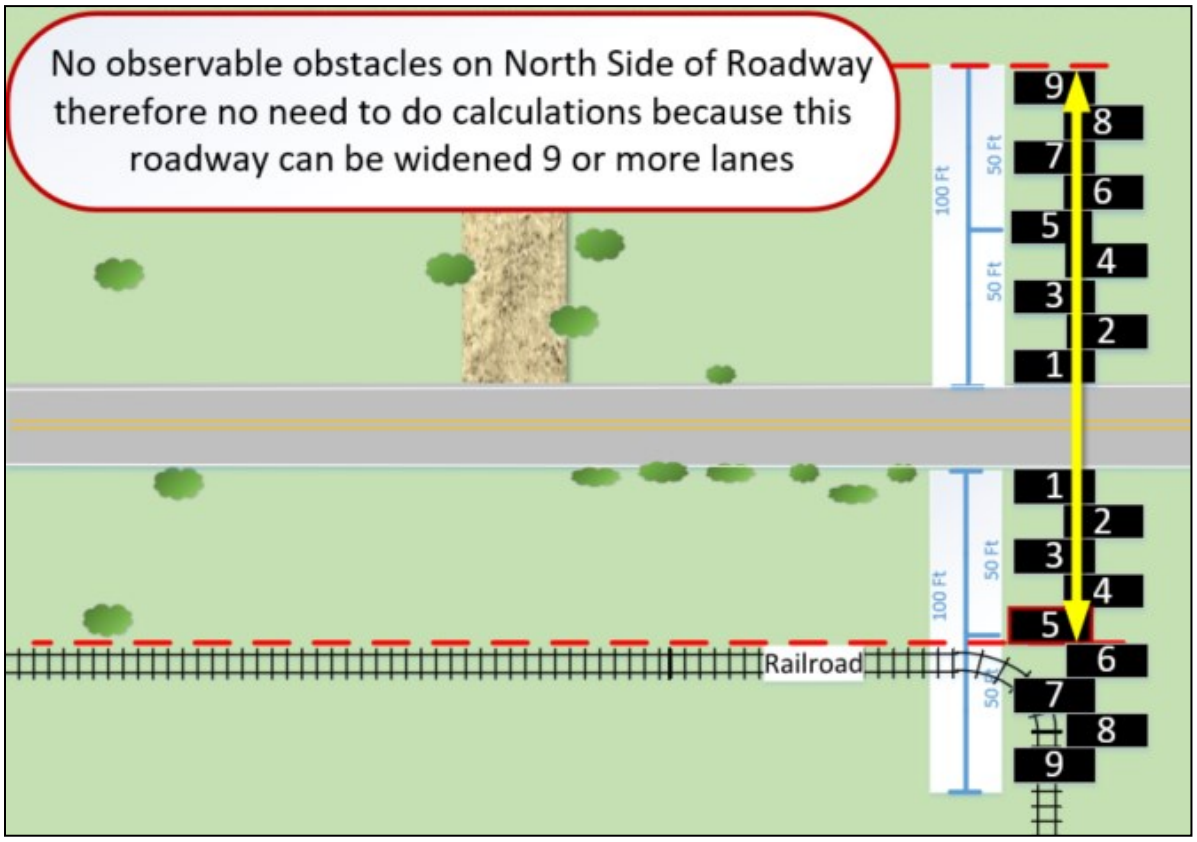
Definition/Background: The number of through lanes that potentially could be added. This is based on how feasible it is to widen the existing roadway based on the presence of obstacles to widening identified in WIDOBST_ (A-G and X) and the proximity of the obstacle to the roadway. Consider medians, areas already within the existing right-of-way, and areas outside existing right-of-way to be available for widening.

How to Gather this Data: The widening potential for a sample is at the most restrictive area within the sample limits on either side of the road. Code for the sample length. If WIDOSTA-G is coded for this sample, record the maximum number of lanes that can be added, total for both sides of the roadway, up to 8 lanes. If WIDOBSTX is coded for the sample, then code 9 lanes for the widening potential. Effective September 2019.

Special Situations: Do not consider restrictions due to the current right-of-way width, or projected traffic. The ability to restripe to narrower lanes, resulting in an additional lane on a multilane facility, does not constitute widening feasibility. The cost of adding capacity to sections or corridors with limited widening feasibility is assumed to be significantly more costly than other, more routine capacity improvements. Effective September 2019.

Code Lanes	Descriptions
0–8	Number of lanes that could be added (total in both directions) WIDOBSTA-G coded.
9 (or more)	Nine or more lanes could be added (total in both directions) WIDOBSTX coded.

EXAMPLE WHERE CALCULATIONS ARE NOT NECESSARY

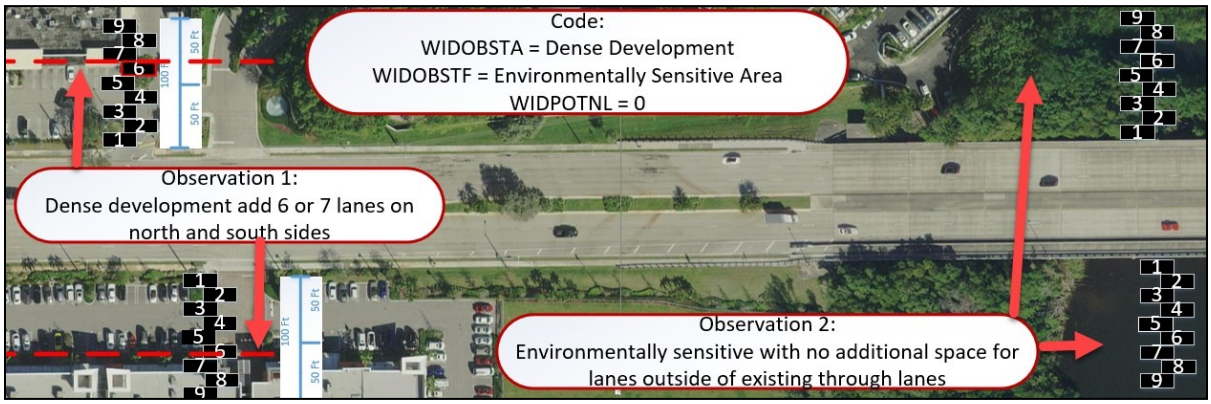


Steps	Descriptions
Identify	No obstacles on one side within 100 feet of outside edge of roadway
Find	The most restrict location on the sample
WIDPOTNL Results	9 Potential Lanes
Widening Obstacles (code only None)	WIDOBSTX (none) WIDOBSTB (transportation)—not coded because 9 or more lanes can be added

Calculation for Lane Estimation

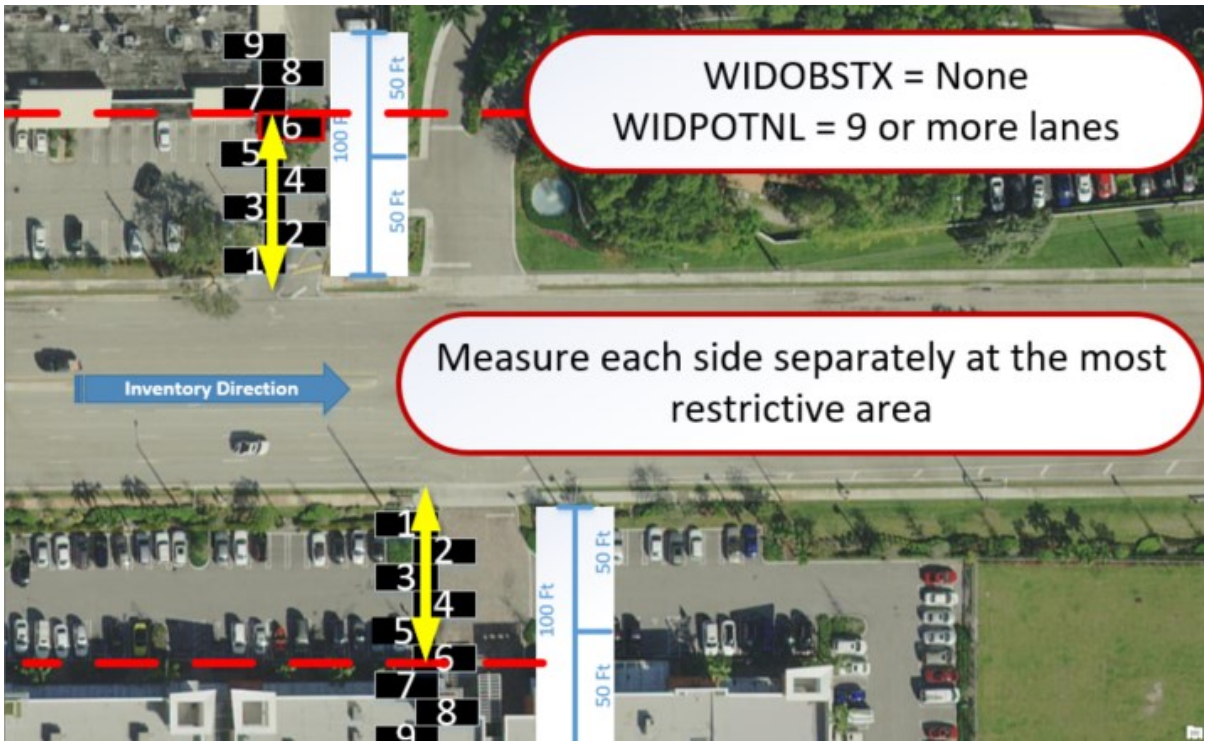
To calculate the number of potential lanes that can be added on the inventory direction of the roadway, measure to the nearest obstacle lateral from the outside through lane, then divide by 11 feet (minimum lane width) and round down. Next, do the same process for the non-inventory direction and sum both potential number of lanes for both directions for the total that is entered as the "Widening Potential." Effective September 2019.

EXAMPLE



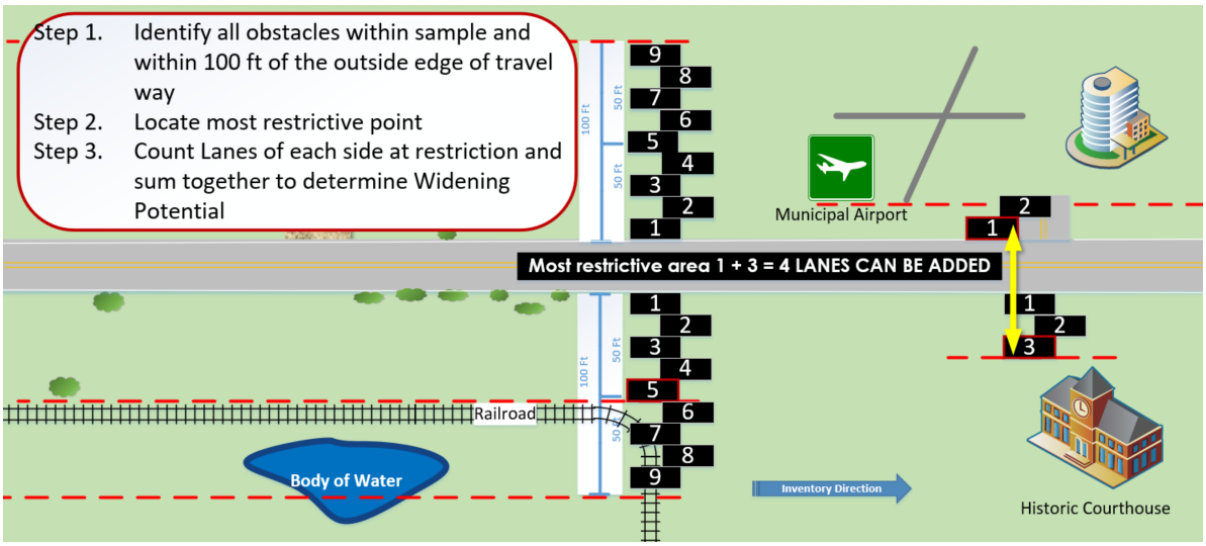
Steps	Descriptions
Identify	All obstacles on both sides within 100 feet of outside edge of roadway.
Find	The most restrict location on the sample (above is at the bridge over the environmentally sensitive area).
Inventory Direction	Measures from the outside through lane on the bridge to the bridge railing. 5 ft./11 ft. = 0.45 (rounded down to **0 potential lanes** on this side)
Opposite Direction	Measures from the outside through lane on the bridge to the bridge railing. 5 ft./11 ft. = 0.45 (rounded down to **0 potential lanes** on this side)
WIDPOTNL Results	**0 Potential Lanes** can be added = 0 on Inventory Direction + 0 on Opposite Direction.
Widening Obstacles (code all present)	WIDOBSTA (business—dense development), WIDOBSTF (body of water), and WIDOBSTF (river/marsh area).

EXAMPLE



Steps	Descriptions
Identify	All obstacles on both sides within 100 feet of outside edge of roadway.
Find	The most restrict location on the sample (above is at the businesses that are dense development in this scenario).
Inventory Direction	Measures 58 feet from the outside through lane to the structures. 58 ft./11 ft. = 5.2 (rounded down to 5 potential lanes on this side)
Opposite Direction	Measure 65 feet from the outside through lane to the structures. If there is not fence or utilities, make a conservative measurement. 65 ft./11 ft. = 5.9 (rounded down to 5 potential lane on this side)
WIDPOTNL Results	10 Potential Lanes can be added = 5 on Inventory Direction + 5 on Opposite Direction Note: 9 is maximum Potential Lanes that can be coded—round down to 9.
Widening Obstacles (code only None)	WIDOBSTX (none). WIDOBSTA (dense development)—not coded because 9 or more lanes can be added.

EXAMPLE



Steps	Descriptions
Identify	All obstacles on both sides within 100 feet of outside edge of roadway.
Find	The most restrict location on the sample (above is at Airport & Historic Courthouse).
Inventory Direction	Measures 36 feet from the outside through lane to the court house/historical structure. 36 ft./11 ft. = 3.3 (rounded down to 3 potential lanes on this side)
Opposite Direction	Measure 20 feet from the outside through lane to the airport. If there is not fence or utilities, make a conservative measurement. 20 ft./11 ft. = 1.8 (rounded down to 1 potential lane on this side)
WIDPOTNL Results	4 Potential Lanes can be added = 3 on Inventory Direction + 1 on Opposite Direction.
Widening Obstacles (code all present)	WIDOBSTB (railroad & airport), WIDOBSTF (body of water), WIDOBSTC (courthouse), WIDOBSTE (historical courthouse).

If you encounter a sample that is difficult to determine the widening potential, contact the HPMS Coordinator for assistance.