

Researcher Dictionary
for
Baseline Video Reduction Data

Version 1.0

April 8, 2010

Revision History

[illegible]

INTRODUCTION

The following data dictionary describes the video reduction variables available in the naturalistic driving data for use by the research community. In addition to this introduction, the data dictionary includes six parts:

Revision History – This data dictionary should be considered a working document that will evolve over time. The revision history shown on the previous page provides a table which describes updates to the document.

Related Reading – A list of related subject areas and specific documents of value to users of the data set described in this data dictionary.

Description of the Data and Format – This section describes what data is available and how the data are stored.

List of Dictionary Fields – A description of the components or fields described in the dictionary for each variable entry.

List of Variables – A list of the entries (variables) in the dictionary which can be used as a table of contents to locate specific variables in the document.

Data Dictionary Entries – The dictionary entries themselves, one for each variable included in the data set.

Related Reading

Individuals working with these data are encouraged to become familiar with them, the method in which they were collected, and literature in the area of secondary data analyses. The following references are provided as starting points to assist the researcher in his or her efforts.

100-Car Study Overview

The 100-Car Naturalistic Driving Study was an instrumented vehicle study conducted in the Northern Virginia / Washington, D.C. area over a two-year period. The primary purpose of the study was to collect large-scale naturalistic driving data. To this end the instrumentation was designed to be unobtrusive, study participants were given no special instructions, and experimenters were not present. Approximately 100 vehicles were instrumented with a suite of sensors including forward and rearward radar, lateral and longitudinal accelerometers, gyro, GPS, access to the vehicle CAN, and five channels of compressed digital video. Collection rates for the various sensors ranged from 1Hz to 10Hz. This collection effort resulted in approximately 2,000,000 vehicles miles and 43,000 hours of driving data.

Methods

100-Car Methods

The methods used for collecting the data are described in:

Dingus, T. A., Klauer, S. G., Neale, V. L., Petersen, A., Lee, S. E., Sudweeks, J., Perez, M. A., Hankey, J., Ramsey, D., Gupta, S., Bucher, C., Doerzaph, Z. R., Jermeland, J., and Knipling, R. R. (2006) *The 100-Car Naturalistic Driving Study, Phase II - Results of the 100-Car Field Experiment* DOT HS 810 593.

Secondary Data Analysis

Use of data collected by other organizations is becoming increasingly common in this digital age. In some fields, such as the social sciences or business, the use of previously collected data is more common than, for example, in psychology or product development. The primary benefit of this approach is cost savings. There are also risks that can threaten the validity of analyses conducted in this manner. The following references include discussion and recommendations for secondary analysts.

Akerstrom, M., Jacobsson, K., Wasterfors, D. (2004). "Reanalysis of previously collected material" in Clive Seale, Giampietro Gobo, Jaber Gubrium, and David Silverman (eds), *Qualitative Research Practice*, Thousand Oaks, CA. Sage Publications Ltd.

Corti, L. Thompson, P. (2004). "Secondary analysis of archived data", in Clive Seale, Giampietro Gobo, Jaber Gubrium, and David Silverman (eds), *Qualitative Research Practice*, Thousand Oaks, CA. Sage Publications Ltd.

Dale, A. Arber, S., and Procter, M. (1988). *Doing Secondary Analysis*, Unwin Hyman Ltd., London.

Hyman, H. (1972). *Secondary Analysis of Sample Surveys*, Wesleyan University Press, Middletown, Connecticut.

Kiecolt, K. and Nathan, L. (1985). *Secondary Analysis of Survey Data – Sage University Paper Series on Quantitative Applications in the Social Sciences*, 53. Sage Publications, Beverly Hills, CA.

Video Reduction

The General Estimates System (GES) is a database compiled by the National Highway Traffic Safety Administration, and is utilized to extract and code information relevant to traffic crashes from reports of police agencies. This document was employed as a model for the development of variables to be collected via review of video from in-vehicle cameras. The GES system was used as a starting point and also as an ongoing reference for the development and use of this data dictionary. Changes in the GES variables were necessary, in large part because of the differences between the GES intent (crash information, gleaned from police accident reports) and the intent of general naturalistic driving data analysis (crash and near crash information, gleaned from video analysis).

National Highway Traffic Safety Administration (2003). General Estimates System Coding and Editing Manual. Highway Traffic Safety Administration. Washington, DC.

Description of the Data and Format

This dataset consists of a single tab-delimited file with detailed epoch, driver state, and driving environment information derived from video reduction. Each row in the file represents one of approximately 19,600 baseline epochs observed in the study.

List of Dictionary Fields

For each of the variables, the dictionary provides the following nine fields:

1. Variable # – A number used for referencing the variables in the dictionary
2. Variable Name – A brief name for the variable
3. Variable Definition – A brief definition for the variable
4. GES Related Variable – GES variable(s) from which a category was directly derived, if applicable
5. Categories – The possible categories for the variable
6. Category Definitions – The definitions for each category
7. Examples and Hints – Special cases, additional guidance in assigning categories
8. Event Start Point – Specific guideline for determination of point in time when a category occurrence begins, if applicable
9. Event Stop Point – Specific guideline for determination of point in time when a category occurrence ends, if applicable

Background Information

The following figure includes background information utilized to evaluate the variable Relation to Junction. Figures 1 and 2 were adapted from the General Estimates System Coding and Editing Manual.

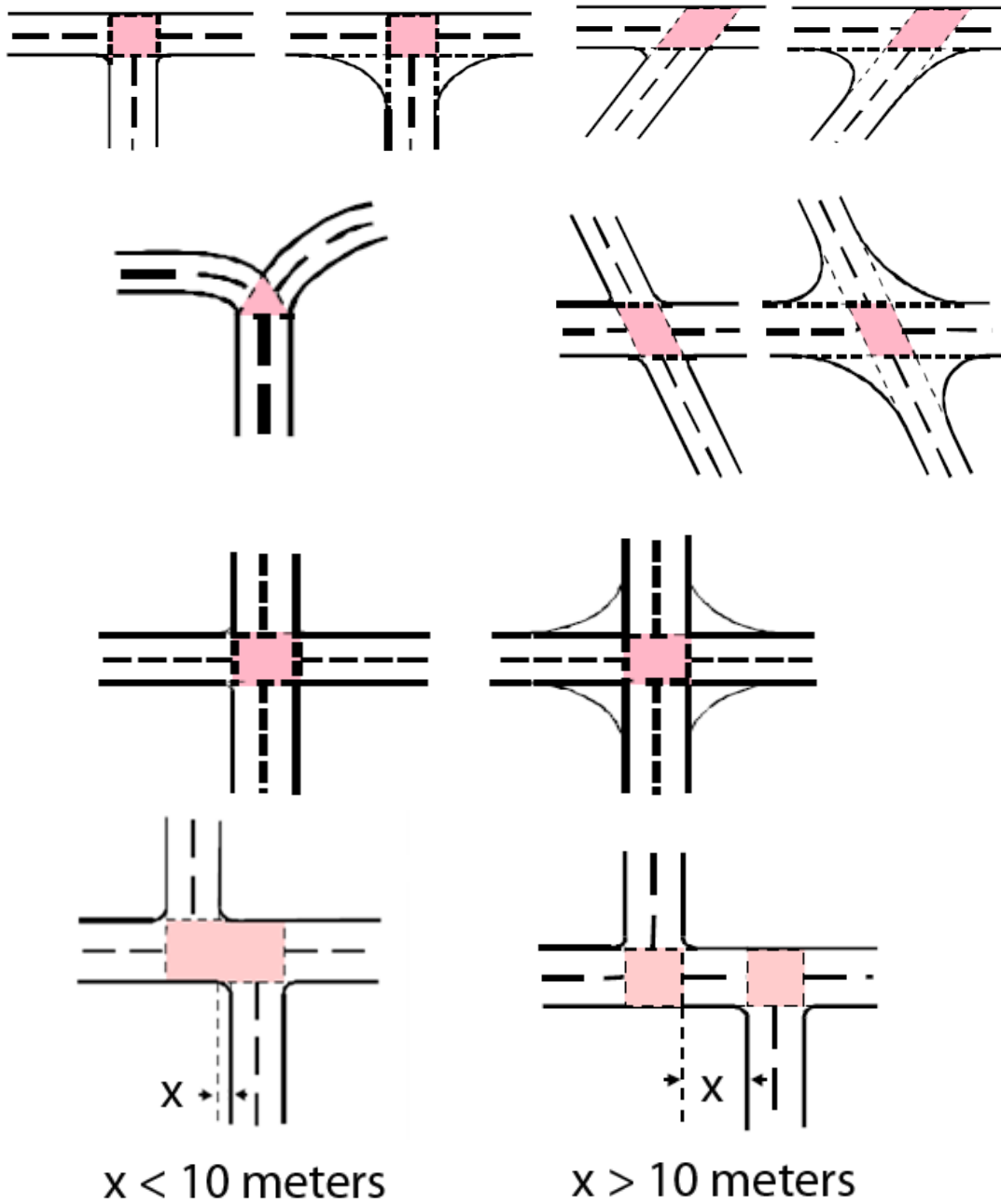
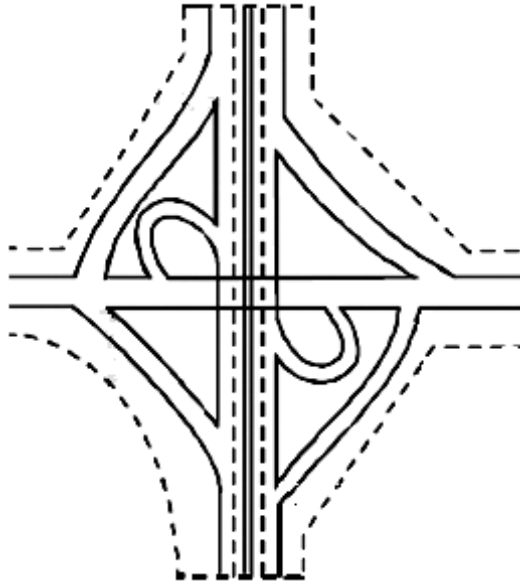


Figure 1. Regarding Relation to Junction (Intersections), GES Variable A09, adapted from GES pp. 58-61.



**Figure 2 Regarding Relation to Junction (Interchange Area), GES Variable A09,
adapted from GES p. 58.**

List of Variables

The following variables are included in the text files.

<u>Variable #</u>	<u>Variable Name</u>
1	Webfileid
2	Vehicle_webid
3	Subject_webid
4	Subject_age
5	Subject_gender
6	Epoch Start
7	Epoch End
8	Driver Behavior 1
9	Driver Behavior 2
10	Driver Behavior 3
11	Distraction 1
12	Distraction 2
13	Distraction 3
14	Distraction 4
15	Distraction 5
16	Distraction 6
17	Surface Condition
18	Traffic Flow
19	Travel Lanes
20	Traffic Density
21	Traffic Control
22	Relation to Junction
23	Alignment
24	Locality
25	Lighting
26	Weather
27	Driver Seatbelt Use

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Variable Definitions

Variable #	Variable Name	Variable Definition	GES Related Variable
1	Webfileid	A unique identification value for each baseline epoch.	
2	Vehicle webid	A unique identification value for each vehicle in the study.	
3	Subject webid	A unique identification value for each primary study participant.	
4	Subject age	Subject age on entry to study. This value is only provided for primary study participants.	
5	Subject gender	Subject gender. This value is only provided primary participants.	
6	Epoch Start	The point in the video when the sequence of events defining the occurrence of the incident, near-crash, or crash begins, which is the point at which the precipitating event begins.	
7	Epoch End	The point in the video when the sequence of events defining the occurrence of the incident, near-crash, or crash ends, which is the point at which the final evasive maneuver is complete.	
8 to 10	Driver Behavior 1,2,3	Driving behaviors (those that either occurred within seconds of the precipitating factor or those behaviors resulting from the context of the driving environment) that include what the driver did to cause or avoid the crash or near-crash. Behaviors may be apparent at times other than the time of the precipitating factor, such as aggressive driving at an earlier moment which led to retaliatory behavior later.	no GES/VA PAR Variable 17/18
11 to 16	Distraction 1,2,3,4,5,6	Observable driver engagement in any of the following secondary tasks, beginning at any point during the 5-6 seconds prior to the onset of the precipitating event. Note that there is no lower limit for distraction duration. If there are more than 3 distractions present, select the most critical or those that most directly impact the event (defined by event outcome or closest in time to the event occurrence).	D07 (Driver Distracted By)
17	Surface Condition	The type of roadway surface condition that would affect the vehicle's coefficient of friction at the start of the precipitating event.	A15 (Roadway Surface Condition)/VA PAR Variable 5
18	Traffic Flow	Roadway design (including the presence or lack of a median) at the start of the precipitating event. If the event occurs at an intersection, the traffic flow conditions just prior to the intersection should be recorded.	A11 (Trafficway Flow)

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Variable Definitions

Variable #	Variable Name	Variable Definition	GES Related Variable
19	Travel Lanes	The number of travel lanes at the time of the precipitating event start (number of lanes the subject vehicle could easily maneuver into, including any turn lanes, acceleration lanes, etc., not taking into account any occupants of these lanes). For divided trafficways, this is the number of lanes on the roadway upon which the vehicle is traveling; for undivided trafficway, this is the number of lanes in all directions (total). If the event occurs at an intersection, the traffic lanes just prior to the intersection should be recorded. Number of lanes does not include those rendered unusable by restriction of the right-of-way (e.g., closed due to construction).	A12 (Number of Travel Lanes)
20	Traffic Density	The level of traffic density at the time of the start of the precipitating event. Based entirely on number of vehicles, and the ability of the driver to select the driving speed.	
21	Traffic Control	Type of traffic control applicable to the vehicle at the time of the start of the precipitating event (applicability determined by the proximity of the vehicle to the traffic control, defined by the vehicle being no further than 3 vehicles away from the traffic control).	A16 (Traffic Control Device)/VA PAR Variable 1
22	Relation to Junction	Subject driver's relation to junction (point where 2 roads meet) at the time of the start of the precipitating event. If the incident occurs off of the roadway, the relation to junction is determined by the point of departure. Note that this is different than GES in that this database recorded Relation to Junction at the beginning of the precipitating event whereas GES manual will code this variable at the beginning of the First Harmful Event.	A09 (Relation to Junction (Specific Location))
23	Alignment	Geographical description of the roadway that best suits the condition at the time of the start of the precipitating event.	A13 (Roadway Alignment) for horizontal, A14 (Roadway Profile) for vertical/VA PAR Variable 3
24	Locality	Best description of the surroundings at the time of the start of the precipitating event. If there are ANY commercial buildings, indicate as business/industrial area (this category takes precedence over others). Indicate school, church, or playground if the driver passes one of these areas at the same time as the beginning of the event (these categories take precedence over any other categories except business/industrial).	No GES/VA PAR Variable 8
25	Lighting	Lighting condition at the time of the start of the precipitating event.	A19 (Lighting Condition)/VA PAR Variable 7

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<i>Variable #</i>	<i>Variable Name</i>	<i>Variable Definition</i>	<i>GES Related Variable</i>
26	Weather	Weather condition at the time of the start of the precipitating event.	A20 (Atmospheric Condition)/VA PAR <i>Variable 4</i>
27	Driver Seatbelt Use	Driver's use of seatbelt at the time of the start of the precipitating event. If video is available, information from events not at the time of the precipitating event may clarify whether seatbelt is in use.	P15 (Restraint System Use (Occupants))

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Category Definitions and Hints

Variable #	Variable Name	Categories	Category Definitions	Examples and Hints
8 to 10	Driver Behavior 1,2,3	None	No apparent behavior(s) related to causing or avoiding the crash or near-crash	
8 to 10	Driver Behavior 1,2,3	Exceeded speed limit	Vehicle traveling at a speed greater than the posted speed limit (not in a work zone)	Over 10 mph above posted speed limit
8 to 10	Driver Behavior 1,2,3	Inattentive or distracted	Driver is not maintaining acceptable attention to forward roadway and the driving task	See categories under Distraction variable/If there is any entry in the "Distraction" variable and the "Distraction Outcome" variable is anything except "No," then this variable is applicable
8 to 10	Driver Behavior 1,2,3	Exceeded safe speed but not speed limit	Vehicle traveling at a speed close to the posted speed limit, but under adverse conditions that require lower speeds to maintain safe driving environment (not in a work zone)	Ex. during conditions that may require slower speeds such as weather, traffic situation, etc.
8 to 10	Driver Behavior 1,2,3	Driving slowly: below speed limit	Vehicle traveling at a speed much lower than the posted speed limit	Under 10 mph under posted speed limit
8 to 10	Driver Behavior 1,2,3	Driving slowly in relation to other traffic: not below speed limit	Vehicle traveling much slower than other vehicles in traffic stream (but not substantially below the posted speed limit)	
8 to 10	Driver Behavior 1,2,3	Illegal passing	Vehicle passes another vehicle in an unsafe or illegal manner (other than on the right)	Ex. passing across double line, going straight through turn lane
8 to 10	Driver Behavior 1,2,3	Passing on right	Vehicle passes another vehicle in the lane immediately to the right of the other vehicle	This variable is not applicable in heavy traffic
8 to 10	Driver Behavior 1,2,3	Other improper or unsafe passing	Vehicle passes another vehicle in a manner not included in previous categories	Ex. passing on two-lane road with limited sight distance or other vehicle present
8 to 10	Driver Behavior 1,2,3	Cutting in, too close in front of other vehicle	Vehicle enters lane of another vehicle too closely to the front of that vehicle	
8 to 10	Driver Behavior 1,2,3	Cutting in, too close behind other vehicle	Vehicle enters lane of another vehicle too closely to the back of that vehicle	
8 to 10	Driver Behavior 1,2,3	Making turn from wrong lane	Vehicle turns left or right from a lane not intended for making that turn	Ex. making turn across lanes

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Category Definitions and Hints

Variable #	Variable Name	Categories	Category Definitions	Examples and Hints
8 to 10	Driver Behavior 1,2,3	Did not see other vehicle during lane change or merge	Vehicle entered a lane or merged into a lane without being aware of another vehicle close by, already traveling in that lane	
8 to 10	Driver Behavior 1,2,3	Driving in other vehicle's blind zone	Vehicle is traveling close to another vehicle in such a way that the driver of the other vehicle is not able to see it	Code when vehicle maintaining this position for at least five seconds
8 to 10	Driver Behavior 1,2,3	Aggressive driving, specific, directed menacing actions	Driver is driving in a purposefully aggressive manner, with actions intended for a specific recipient	Ex. exhibiting road rage
8 to 10	Driver Behavior 1,2,3	Reckless driving	Driver is driving in an aggressive manner not described in previous categories	Ex. reckless driving without directed menacing actions, such as excessive speed, weaving in and out of traffic, tailgating
8 to 10	Driver Behavior 1,2,3	Wrong side of road, not overtaking	Vehicle is traveling on the wrong side of the road with no intent of passing or overtaking another vehicle	
8 to 10	Driver Behavior 1,2,3	Following too closely	Vehicle is traveling at a unsafe distance (too close) behind the lead vehicle	
8 to 10	Driver Behavior 1,2,3	Failed to signal, or improper signal	Vehicle failed to properly signal its intent, either signaling incorrectly or not at all	Note: this category is partially redundant with the categories "Failure to signal, with other violations or unsafe actions" and "Failure to signal, without other violations or unsafe actions"--use with planned maneuvers, not sudden evasive maneuvers
8 to 10	Driver Behavior 1,2,3	Improper turn, wide right turn	Vehicle turned right from the travel path, unnecessarily encroaching into the adjacent lane	Ex. turning into oncoming traffic
8 to 10	Driver Behavior 1,2,3	Improper turn, cut corner on left	Vehicle turned left from the travel path, unnecessarily encroaching into the adjacent lane	Ex. cuts into adjacent lane or oncoming traffic
8 to 10	Driver Behavior 1,2,3	Improper turn, other	Vehicle turned left or right from the travel path in an unsafe manner not described in previous categories	Ex. turning from a non-turn lane
8 to 10	Driver Behavior 1,2,3	Improper backing, did not see	Vehicle traveled in reverse without obtaining a proper view of the surroundings behind the vehicle	Ex. did not check mirrors when backing

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Variable #	Variable Name	Categories	Category Definitions	Examples and Hints
8 to 10	Driver Behavior 1,2,3	Improper backing, other	Vehicle traveled in reverse in an unsafe manner not described in previous categories	Ex. backing into traffic
8 to 10	Driver Behavior 1,2,3	Improper start from parked position	Vehicle moved from a parked position (vehicle was turned on and advanced from a fully stopped position) in an unsafe manner	Ex. did not check mirrors
8 to 10	Driver Behavior 1,2,3	Disregarded officer or watchman	Driver did not notice or obey an officer of the law or watchman providing guidance in the driving task	Ex. unaware or late to react
8 to 10	Driver Behavior 1,2,3	Signal violation, apparently did not see signal	Driver did not notice and thus disobeyed a traffic signal	Ex. unaware or late to react
8 to 10	Driver Behavior 1,2,3	Signal violation, intentionally disregarded signal	Driver saw a traffic signal but purposefully disregarded its instruction	Ex. driver saw a red traffic light but proceeded through the intersection
8 to 10	Driver Behavior 1,2,3	Signal violation, tried to beat signal change	Driver accelerated or continued at a speed intended to pass through an intersection before the traffic signal turned red	Ex. went through intersection while light was yellow
8 to 10	Driver Behavior 1,2,3	Stop sign violation, apparently did not see stop sign	Driver did not notice and thus disobeyed a stop sign	Ex. unaware or late to react
8 to 10	Driver Behavior 1,2,3	Stop sign violation, intentionally ran stop sign at speed	Driver saw a stop sign but purposefully drove through the intersection at a speed greater than 15 mph	Ex. purposefully ran stop sign without decelerating below a speed of 15 mph
8 to 10	Driver Behavior 1,2,3	Stop sign violation, "rolling stop"	Driver did not come to a complete stop at a stop sign (speed was below 15 mph, but above 0 mph)	
8 to 10	Driver Behavior 1,2,3	Other sign (e.g., Yield) violation, apparently did not see sign	Driver did not notice and thus disobeyed a traffic sign (other than a stop sign)	
8 to 10	Driver Behavior 1,2,3	Other sign (e.g., Yield) violation, intentionally disregarded	Driver saw a traffic sign (other than a stop sign) but purposefully disobeyed that sign	
8 to 10	Driver Behavior 1,2,3	Other sign violation	Driver disobeyed a traffic sign in a manner not described in previous categories	

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Variable #	Variable Name	Categories	Category Definitions	Examples and Hints
8 to 10	Driver Behavior 1,2,3	Non-signed crossing violation	Driver proceeded through a non-signed intersection in an unsafe manner	Ex. did not check traffic when entering roadway from driveway
8 to 10	Driver Behavior 1,2,3	Right-of-way error in relation to other vehicle or person, apparent recognition failure	Driver made the incorrect decision regarding who had the right-of-way, his own vehicle or another vehicle or pedestrian, due to a misunderstanding of the situation	Ex. did not see other vehicle
8 to 10	Driver Behavior 1,2,3	Right-of-way error in relation to other vehicle or person, apparent decision failure	Driver made the incorrect decision regarding who had the right-of-way, his own vehicle or another vehicle or pedestrian, due to improper analysis of the situation	Ex. did see other vehicle prior to action but misjudged gap
8 to 10	Driver Behavior 1,2,3	Right-of-way error in relation to other vehicle or person, other or unknown cause	Driver made incorrect decision regarding who had the right-of-way, his own vehicle or another vehicle or pedestrian, for reasons not described in previous categories	
8 to 10	Driver Behavior 1,2,3	Sudden or improper braking	Vehicle braked suddenly or in an unsafe manner in the roadway (but did not come to a complete stop as a result)	If the sudden braking leads directly to stopping (speed indicator goes to zero), code as "sudden or improper stopping on roadway"
8 to 10	Driver Behavior 1,2,3	Sudden or improper stopping on roadway	Vehicle stopped without ample warning or in an unsafe manner in the roadway	Ex. hard or late braking/code only when driver speed indicator goes to zero--code "sudden or improper braking" otherwise. The only time to code braking and stopping for one event would be when the braking doesn't lead directly to the stopping (subject brakes, then a bit later has to suddenly stop).
8 to 10	Driver Behavior 1,2,3	Parking in improper or dangerous location	Vehicle parked (stopped with the intent of remaining stopped) in a location not intended for parking	Ex. shoulder of Interstate

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Variable #	Variable Name	Categories	Category Definitions	Examples and Hints
8 to 10	Driver Behavior 1,2,3	Failure to signal, with other violations or unsafe actions	Driver failed to properly signal intent during actions consisting of other unsafe driving manner(s)	Ex. during an illegally executed lane change in the middle of an intersection - use with planned maneuvers, not sudden evasive maneuvers
8 to 10	Driver Behavior 1,2,3	Failure to signal, without other violations or unsafe actions	Driver failed to properly signal intent but did not exhibit other unsafe driving action(s)	Ex. changing lanes without signaling or turning without signaling - use with planned maneuvers, not sudden evasive maneuvers
8 to 10	Driver Behavior 1,2,3	Speeding or other unsafe actions in work zone	Vehicle traveling at a speed greater than the posted speed limit, driving in a work zone	
8 to 10	Driver Behavior 1,2,3	Failure to dim headlights	Vehicle traveling with high beams activated on headlights, without dimming the lights when appropriate	
8 to 10	Driver Behavior 1,2,3	Driving without lights or insufficient lights	Vehicle traveling with no headlights on (or inappropriate headlights on) when the situation requires such lighting for safety	
8 to 10	Driver Behavior 1,2,3	Avoiding pedestrian	Driver behaved in a manner intended to avoid conflict with a pedestrian	
8 to 10	Driver Behavior 1,2,3	Avoiding other vehicle	Driver behaved in a manner intended to avoid conflict with another vehicle	Include this code when subject is at fault or partially at fault, and hits or nearly hits (or is hit or nearly hit by) another vehicle, and the subject does something to try and avoid the crash or near miss (i.e., braking, steering right or left)
8 to 10	Driver Behavior 1,2,3	Avoiding animal	Driver behaved in a manner intended to avoid conflict with an animal	
8 to 10	Driver Behavior 1,2,3	Apparent unfamiliarity with roadway	Driver behaved in an unsafe manner, apparently due to an unfamiliarity with the surrounding traffic situation	Ex. repeated u-turns, reading maps, papers, etc.
8 to 10	Driver Behavior 1,2,3	Apparent unfamiliarity with vehicle	Driver behaved in an unsafe manner, apparently due to an unfamiliarity with the vehicle	Ex. unfamiliarity with displays and controls

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Variable #	Variable Name	Categories	Category Definitions	Examples and Hints
8 to 10	Driver Behavior 1,2,3	Apparent general inexperience driving	Driver behaved in an unsafe manner, apparently due to lack of experience with the driving task	Ex. hyper-focused driving, overly cautious maneuvers, etc.
8 to 10	Driver Behavior 1,2,3	Use of cruise control contributed to late braking	Driver delayed applying brake pedal because the cruise control was activated, resulting in an unsafe situation	
8 to 10	Driver Behavior 1,2,3	Other	Other behavior not described in previous categories	
11 to 16	Distraction 1,2,3,4,5,6	Not Distracted	There are no observable signs of driver distraction	
11 to 16	Distraction 1,2,3,4,5,6	Lost in thought	Driver performs multiple non-specific eye glances within 6 second period of time	
11 to 16	Distraction 1,2,3,4,5,6	Looked but did not see	Driver is looking right at where incident is occurring, but shows no reaction	
11 to 16	Distraction 1,2,3,4,5,6	Talking/singing	When driver is moving lips as if in conversation or singing a song.	Mark this if driver is talking or singing and there is no other passenger visible in the car. Only use this distraction if you cannot see a passenger in the camera or the driver is talking and not looking in the direction of a passenger seat and does not turn head as if communicating with someone.
11 to 16	Distraction 1,2,3,4,5,6	Dancing	This could be when the driver is using his/her arms to go with the beat of the music or moving head.	
11 to 16	Distraction 1,2,3,4,5,6	Reading	This is reading material that is in the vehicle, but not a part of the vehicle (i.e., not reading external signs, or radio display). This could be reading directions, paper material, packaging. If reading a phone number, record as dialing cell phone.	
11 to 16	Distraction 1,2,3,4,5,6	Cognitive - Other	Includes when driver is writing, emotionally upset or angry, or other activity that requires the driver to obviously be thinking about something other than driving	

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Variable #	Variable Name	Categories	Category Definitions	Examples and Hints
11 to 16	Distraction 1,2,3,4,5,6	Passenger in adjacent seat	When the passenger is not visible, but the driver is clearly interacting with a passenger (other than a child) in the adjacent seat. This could be talking, listening, reacting to (i.e., laughing), moving toward or away from the passenger (i.e., reaching for the passenger, or avoiding a pat from the person). If the passenger is visible (even if the driver is not interacting at a given time), code this distraction.	Use this distraction if you can see the passenger (other than a child) in the camera or the driver is talking and looking in the direction of the passenger seat. Entire trip file or segment may be used to look for evidence of passenger. Consider this distraction as long as the driver and passenger remain in the vehicle (even if the car stops or is idling).
11 to 16	Distraction 1,2,3,4,5,6	Passenger in rear seat	When the passenger is not visible, but the driver is clearly interacting with a passenger (other than a child) in the rear seat. This could be talking, listening, reacting to (i.e., laughing), moving toward or away from the passenger (i.e., reaching for the passenger, or avoiding a pat from the person). If the passenger is visible (even if the driver is not interacting at a given time), code this distraction.	Use this distraction if you can see the passenger (other than a child) in the camera or the driver is talking and looking in the direction of the rear seat. Entire trip file or segment may be used to look for evidence of passenger. Consider this distraction as long as the driver and passenger remain in the vehicle (even if the car stops or is idling).
11 to 16	Distraction 1,2,3,4,5,6	Child in adjacent seat	When the child is not visible, but the driver is clearly interacting with a child in the adjacent seat. This could be talking, listening, reacting to (i.e., laughing), moving toward or away from the child (i.e., reaching for a child, not object, or avoiding a pat from the child). If the child is visible (even if the driver is not interacting at a given time), code this distraction.	Use this distraction if you can see the child in the camera or the driver is talking and looking in the direction of the adjacent seat, handing bottles/toys, etc. Entire trip file or segment may be used to look for evidence of passenger. Consider this distraction as long as the driver and passenger remain in the vehicle (even if the car stops or is idling).

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Variable #	Variable Name	Categories	Category Definitions	Examples and Hints
11 to 16	Distraction 1,2,3,4,5,6	Child in rear seat	When the child is not visible, but the driver is clearly interacting with a child in the rear seat. This could be talking, listening, reacting to (i.e., laughing), moving toward or away from the child (i.e., reaching for a child, not object, or avoiding a pat from the child). If the child is visible (even if the driver is not interacting at a given time), code this distraction.	Use this distraction if you can see the child in the camera or the driver is talking and looking in the direction of the rear seat, handing bottles/toys, etc. If the driver is looking at the rear passenger using the rearview mirror, then that would be coded as passenger in rear seat AND center rear-view mirror. Entire trip file or segment may be used to look for evidence of passenger. Consider this distraction as long as the driver and passenger remain in the vehicle (even if the car stops or is idling).
11 to 16	Distraction 1,2,3,4,5,6	Moving object in vehicle	When an object inside the vehicle is in motion, either due to the motion of the vehicle or due to another passenger throwing the object.	Ex. object fell off seat when driver stopped hard at a traffic light
11 to 16	Distraction 1,2,3,4,5,6	Insect in vehicle	Swatting at insect, moving body to avoid insect, looking around trying to locate insect.	
11 to 16	Distraction 1,2,3,4,5,6	Pet in vehicle	Any interaction with pet, including petting, talking to, or moving pet or pet carrier.	Only code if animal/pet is visible at some point in the trip file or if there is history/context with the driver and the driver is exhibiting behaviors that are appropriate to having a pet in the vehicle.
11 to 16	Distraction 1,2,3,4,5,6	Object dropped by driver	When a driver is holding something and it drops and the driver then picks it back up.	
11 to 16	Distraction 1,2,3,4,5,6	Reaching for object (not cell phone)	When driver reaches for an object, other than a cell phone.	Once the driver has finished reaching for the object and has it in hand, then it becomes 'object in vehicle_other', as long as it doesn't fit into any of the other categories (i.e. eating or drinking).
11 to 16	Distraction 1,2,3,4,5,6	Animal/Object in Vehicle-- Other	When a driver clearly is looking at, handling, or manipulating an object (visible or not) or thing located in the vehicle, other than those listed in other categories	

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11 to 16	Distraction 1,2,3,4,5,6	Talking/listening on cell phone	When a driver is talking or has phone up to ear as if listening to a phone conversation or waiting for person they are calling to pick up the phone. If driver has ear piece, reductionist must observe the driver talking repeatedly.	Cell phone use is always categorized as Distraction
11 to 16	Distraction 1,2,3,4,5,6	Dialing hand-held cell phone	When a driver is pushing buttons on a cell phone to dial a number or check something else on their cell phone. This would also include reading a phone number from a sheet of paper.	
11 to 16	Distraction 1,2,3,4,5,6	Dialing hand-held cell phone using quick keys	When a driver is pushing buttons on a cell phone to dial a number or check something else on their cell phone. This would also include reading a phone number from a sheet of paper.	
11 to 16	Distraction 1,2,3,4,5,6	Dialing hands-free cell phone using voice activated software	When a driver speaks into open or activated cell phone with long, prior delay of no speaking into device and no button presses (i.e., most likely not in prior conversation).	
11 to 16	Distraction 1,2,3,4,5,6	Locating/reaching/ answering cell phone	When the driver is reaching towards his/her cell phone and then putting the phone to his/her ear.	If more than one distraction happens (i.e., driver looks for phone, reaches for it and then answers it), the last frame number would be the last distraction (i.e., answering cell phone.)
11 to 16	Distraction 1,2,3,4,5,6	Cell phone - Other	When a driver is interacting with a cell phone in some manner, i.e., looking at a cell phone but not necessarily holding or manipulating the cell phone in any way.	
11 to 16	Distraction 1,2,3,4,5,6	Locating/reaching PDA	When driver reaches or starts to glance around for PDA.	
11 to 16	Distraction 1,2,3,4,5,6	Operating PDA	When driver is pressing buttons on the PDA.	
11 to 16	Distraction 1,2,3,4,5,6	Viewing PDA	When driver is looking at PDA, but not pressing any buttons	

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Variable #	Variable Name	Categories	Category Definitions	Examples and Hints
11 to 16	Distraction 1,2,3,4,5,6	PDA - Other	When a driver is interacting with a PDA in some manner, i.e., looking at a PDA but not necessarily holding or manipulating the PDA in any way.	
11 to 16	Distraction 1,2,3,4,5,6	Adjusting climate control	When driver interacts with climate control either by touching the climate control buttons, or glancing at the climate control on dashboard.	
11 to 16	Distraction 1,2,3,4,5,6	Adjusting radio	When driver interacts with radio either by touching the radio buttons on dashboard or steering wheel, or just glancing at the radio on dashboard.	
11 to 16	Distraction 1,2,3,4,5,6	Inserting/retrieving cassette	When driver picks up cassette in vehicle and pushes it into cassette slot and presses any subsequent buttons to get cassette to play/rewind/fast forward and then play, or when driver presses button to eject cassette and then places it somewhere in vehicle.	
11 to 16	Distraction 1,2,3,4,5,6	Inserting/retrieving CD	When driver picks up CD in vehicle and pushes it into CD slot and presses any subsequent buttons to get CD to play/rewind/fast forward and then play, or when driver presses button to eject CD and then places it somewhere in vehicle.	
11 to 16	Distraction 1,2,3,4,5,6	Adjusting other devices integral to vehicle	When driver interacts with a manufacturer-installed device other than those listed in other categories, either by touching or glancing at the device.	Includes interaction with seat belt, door locks, etc.
11 to 16	Distraction 1,2,3,4,5,6	Looking at previous crash or incident	When a driver is looking outside of the vehicle in the direction of what is obviously an accident or incident.	Only mark if it is clear that the driver is tracking a specific external distraction as they drive by--mark what you see the driver doing (ex., mark inattention: rear-view mirror, if driver is looking at mirror)/quick glances are not categorized in this category, code these according to where the driver is glancing (ex., mirror or window)

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Category Definitions and Hints

Variable #	Variable Name	Categories	Category Definitions	Examples and Hints
11 to 16	Distraction 1,2,3,4,5,6	Looking at pedestrian	When a driver is looking outside of the vehicle in the direction of a pedestrian (not in a construction zone) either on the side of the road or in front of them (i.e. using a cross walk or riding a bike at a red light).	
11 to 16	Distraction 1,2,3,4,5,6	Looking at animal	When a driver is looking outside of the vehicle in the direction of an animal either on the side of the road. This would not be used for an animal crossing the road.	
11 to 16	Distraction 1,2,3,4,5,6	Looking at an object	When a driver is looking outside of the vehicle in the direction of an object (not in a construction zone) on the side of the road (i.e. a box).	
11 to 16	Distraction 1,2,3,4,5,6	Distracted by construction	When a driver is looking outside of the vehicle in the direction of a construction zone. A construction zone would be defined as seeing a barrel, person in a hard hat, construction equipment or vehicles.	
11 to 16	Distraction 1,2,3,4,5,6	Other external distraction	When a driver is looking outside of the vehicle for purposes not described in previous categories	
11 to 16	Distraction 1,2,3,4,5,6	Eating with utensils	When a driver has food that will be put in his/her mouth via a utensil like a fork, spoon, knife, chopsticks etc.	
11 to 16	Distraction 1,2,3,4,5,6	Eating without utensils	When a driver has food that will be put in his/her mouth and a utensil is not used to place the food in the driver's mouth.	
11 to 16	Distraction 1,2,3,4,5,6	Drinking with lid and straw	When a driver uses a straw to drink from a container that has a cover on it and cannot easily spill if it tips over	Ex. Fountain drink with lid and straw, sippy water bottle
11 to 16	Distraction 1,2,3,4,5,6	Drinking with lid, no straw	When a driver drinks from a container that has a cover on it and cannot easily spill if it tips over (not using a straw)	Ex. Coffee mug with lid that closes
11 to 16	Distraction 1,2,3,4,5,6	Drinking with straw, no lid	When a driver uses a straw to drink from a container that does not have a lid	Ex. Uncovered fountain drink with a straw
11 to 16	Distraction 1,2,3,4,5,6	Drinking from an open container	When a driver drinks from a container that does not have a lid (not using a straw)	Ex. Uncovered cup, coffee cup, water bottle with lid off, soda can

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Category Definitions and Hints

Variable #	Variable Name	Categories	Category Definitions	Examples and Hints
11 to 16	Distraction 1,2,3,4,5,6	Reaching for cigar/cigarette	When driver reaches or starts to glance around for cigar/cigarette.	
11 to 16	Distraction 1,2,3,4,5,6	Lighting cigar/cigarette	When driver is reaching for and/or lighting cigar/cigarette.	
11 to 16	Distraction 1,2,3,4,5,6	Smoking cigar/cigarette	When driver has a lit cigar/cigarette in their mouth or hand.	
11 to 16	Distraction 1,2,3,4,5,6	Extinguishing cigar/cigarette	When driver puts out his/her cigar/cigarette, or hands it to someone else.	
11 to 16	Distraction 1,2,3,4,5,6	Combing/brushing/fixing hair	Any touching, adjusting, or combing/brushing of hair.	Picking up comb/hairbrush would go under object/animal/insect in vehicle: reaching for object
11 to 16	Distraction 1,2,3,4,5,6	Applying make-up	Applying any body product to body. This would include lotions.	Picking up makeup would go under object/animal/insect in vehicle: reaching for object
11 to 16	Distraction 1,2,3,4,5,6	Shaving	Using any appliance to remove hair from body. This does not include tweezing.	Picking up razor would go under object/animal/insect in vehicle: reaching for object. Using tweezers would go under Personal hygiene: other.
11 to 16	Distraction 1,2,3,4,5,6	Brushing/flossing teeth	Using any appliance to brush, floss or otherwise clean teeth or mouth.	
11 to 16	Distraction 1,2,3,4,5,6	Biting nails/cuticles	When driver bite nails or cuticles	
11 to 16	Distraction 1,2,3,4,5,6	Removing/adjusting jewelry	When driver removes or adjusts jewelry, including watches.	
11 to 16	Distraction 1,2,3,4,5,6	Removing/inserting contact lenses	When driver is removing or inserting contact lens(es) from eye(s)	
11 to 16	Distraction 1,2,3,4,5,6	Other personal hygiene	Other personal hygiene activities not described in previous categories	These might include checking oneself in mirror without the preceding tasks, trying to get something out of one's eye
11 to 16	Distraction 1,2,3,4,5,6	Inattention to the Forward Roadway - Left window	When driver glances out the left (driver's side) window for a driving-related issue (i.e., changing lanes, crossing through an intersection).	Mirror check or window check: Driver-related inattention-when changing lanes, often can't tell if they looked but didn't see other vehicle or misjudged gap, so lumped under driver-related inattention

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Variable #	Variable Name	Categories	Category Definitions	Examples and Hints
11 to 16	Distraction 1,2,3,4,5,6	Inattention to the Forward Roadway - Left mirror	When driver glances at the left rear-view mirror for a driving-related issue (i.e., changing lanes). Exception: if the vehicle is backing and the driver is looking at the left mirror to see the road in the direction of travel, this is not coded as a distraction.	Mirror check or window check: Driver-related inattention-when changing lanes, often can't tell if they looked but didn't see other vehicle or misjudged gap, so lumped under driver-related inattention
11 to 16	Distraction 1,2,3,4,5,6	Inattention to the Forward Roadway - Center mirror	When driver glances at the center rear-view mirror for a driving-related issue (i.e., changing lanes, crossing through an intersection). Exception: if the vehicle is backing and the driver is looking at the center mirror to see the road in the direction of travel, this is not coded as a distraction.	Mirror check or window check: Driver-related inattention-when changing lanes, often can't tell if they looked but didn't see other vehicle or misjudged gap, so lumped under driver-related inattention
11 to 16	Distraction 1,2,3,4,5,6	Inattention to the Forward Roadway - Right mirror	When driver glances at the right rear-view mirror for a driving-related issue (i.e., changing lanes). Exception: if the vehicle is backing and the driver is looking at the right mirror to see the road in the direction of travel, this is not coded as a distraction.	Mirror check or window check: Driver-related inattention-when changing lanes, often can't tell if they looked but didn't see other vehicle or misjudged gap, so lumped under driver-related inattention
11 to 16	Distraction 1,2,3,4,5,6	Inattention to the Forward Roadway - Right window	When driver glances out the right (passenger's side) window for a driving-related issue (i.e., changing lanes, crossing through an intersection).	Mirror check or window check: Driver-related inattention-when changing lanes, often can't tell if they looked but didn't see other vehicle or misjudged gap, so lumped under driver-related inattention
11 to 16	Distraction 1,2,3,4,5,6	No analyzed data	Complete analysis is not possible due to insufficient data	Ex. Part of video is missing or not viewable
17	Surface Condition	Dry	There is no foreign material (rain, snow, oil, etc.) on the roadway in the area of the event (nothing on the road to affect the driving task)	A roadway made of sand or dirt would be coded "Dry" under dry conditions, not "Other"
17	Surface Condition	Wet	Roadway is completely or partially wet in the area of the event (not snowy, icy, muddy, or oily)	
17	Surface Condition	Snowy	There is some amount of unmelted snow or slush on the roadway in the area of the event, enough to affect the driving task (no ice on the road in the area of interest)	If other conditions are also present in the area affecting the event, choose the first category from this list that is applicable: icy, snowy, oily, or muddy/add other conditions to narrative

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Variable #	Variable Name	Categories	Category Definitions	Examples and Hints
17	Surface Condition	Icy	There is some amount of ice on the roadway in the area of the event, enough to affect the driving task	If there is ice on the surface that affects the event, code as icy, regardless of any other coexisting conditions/add other conditions to narrative
17	Surface Condition	Muddy	There is some amount of mud on the roadway in the area of the event, enough to affect the driving task	If other conditions (other than simply a wet road) are also present in the area affecting the event, choose the first category from this list that is applicable: icy, snowy, or oily/add other conditions to narrative
17	Surface Condition	Oily	There is some amount of oil, grease, or other slippery fluid on the roadway in the area of the event, enough to affect the driving task	If the road is also icy (or icy and snowy) in the area affecting the event, categorize as icy. If the road is also snowy, categorize as snowy. Add other conditions to narrative.
17	Surface Condition	Other	There is some type of foreign substance on the road, not listed in previous categories, enough to affect the driving task	If the substance on the road can be driven over, but would affect the vehicle's coefficient of friction, code as "other" road condition (material large or harmful enough to necessitate maneuvering around it would be categorized as an object or obstacle in the road)
17	Surface Condition	No analyzed data	Complete analysis is not possible due to insufficient data	Ex. Part of video is missing or not viewable
18	Traffic Flow	Not divided	Trafficway is not divided (no median or barrier) and traffic in at least one lane travels in opposing direction to another lane	
18	Traffic Flow	Divided (median strip or barrier)	Trafficway is divided (by a median strip or barrier, for example) and traffic travels in only one direction on each side of the division	
18	Traffic Flow	One-way traffic	Trafficway may be divided or not divided, but traffic in all lanes flows in the same direction	Ex. one-way streets, entrance/exit ramps
18	Traffic Flow	No lanes	There are no marked lanes of travel on the surface upon which the vehicle is traveling	Ex. parking lots with no marked lanes

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Variable #	Variable Name	Categories	Category Definitions	Examples and Hints
18	Traffic Flow	No analyzed data	Complete analysis is not possible due to insufficient data	Ex. Part of video is missing or not viewable
19	Travel Lanes	1	One lane is available for travel at the time of the event. This option should be used if the driver is in a parking lot area or on a roadway with no lane markings.	
19	Travel Lanes	2	Two lanes are available for travel at the time of the event	
19	Travel Lanes	3	Three lanes are available for travel at the time of the event	
19	Travel Lanes	4	Four lanes are available for travel at the time of the event	
19	Travel Lanes	5	Five lanes are available for travel at the time of the event	
19	Travel Lanes	6	Six lanes are available for travel at the time of the event	
19	Travel Lanes	7	Seven lanes are available for travel at the time of the event	
19	Travel Lanes	8+	Eight or more lanes are available for travel at the time of the event	
19	Travel Lanes	No analyzed data	Complete analysis is not possible due to insufficient data	Ex. Part of video is missing or not viewable
20	Traffic Density	Level-of-service A: Free flow	Individual drivers are virtually unaffected by the presence of others in the traffic stream. Freedom to select desired speeds and to maneuver within the traffic stream is extremely high. The general level of comfort and convenience provided to the motorist, passenger, or pedestrian is excellent.	

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Variable #	Variable Name	Categories	Category Definitions	Examples and Hints
20	Traffic Density	Level-of-service B: Flow with some restrictions	In the range of stable flow, but the presence of other users in the traffic stream begins to be noticeable. Freedom to select desired speeds is relatively unaffected, but there is a slight decline in the freedom to maneuver within the traffic stream from LOS A. The level of comfort and convenience provided is somewhat less than at LOS A, because the presence of others in the traffic stream begins to affect individual behavior.	
20	Traffic Density	Level-of-service C: Stable flow, maneuverability and speed are more restricted	In the range of stable flow, but marks the beginning of the range of flow in which the operation of individual users becomes significantly affected by interactions with others in the traffic stream. The selection of speed is now affected by the presence of others, and maneuvering within the traffic stream requires substantial vigilance on the part of the user. The general level of comfort and convenience declines noticeably at this level.	
20	Traffic Density	Level-of-service D: Unstable flow - temporary restrictions substantially slow driver	High-density, but stable flow. Speed and freedom to maneuver are severely restricted, and the driver or pedestrian experiences a generally poor level of comfort and convenience. Small increases in traffic flow will generally cause operational problems at this level.	
20	Traffic Density	Level-of-service E: Flow is unstable, vehicles are unable to pass, temporary stoppages, etc.	Operating conditions at or near the capacity level. All speeds are reduced to a low, but relatively uniform value. Freedom to maneuver within the traffic stream is extremely difficult, and-it is generally accomplished by forcing a vehicle or pedestrian to "give way" to accommodate such maneuvers. Comfort and convenience levels are extremely poor, and driver or pedestrian frustration is generally high. Operations at this level are usually unstable, because small increases in flow or minor perturbations within the traffic stream will cause breakdowns.	

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Variable #	Variable Name	Categories	Category Definitions	Examples and Hints
20	Traffic Density	Level-of-service F: Forced traffic flow condition with low speeds and traffic volumes that are below capacity.	Forced or breakdown flow. This condition exists wherever the amount of traffic approaching a point exceeds the amount which can traverse the point. Queues form behind such locations. Operations within the queue are characterized by stop-and-go waves, and they are extremely unstable. Vehicles may progress at reasonable speeds for several hundred feet or more, then be required to stop in a cyclic fashion. Level-of-service F is used to describe the operating conditions within the queue, as well as the point of the breakdown. It should be noted, however, that in many cases operating conditions of vehicles or pedestrians discharged from the queue may be quite good. Nevertheless, it is the point at which arrival flow exceeds discharge flow, which causes the queue to form, and level-of-service F is an appropriate designation for such points.	
20	Traffic Density	No analyzed data	Complete analysis is not possible due to insufficient data	Ex. Part of video is missing or not viewable
21	Traffic Control	No traffic control	There is no traffic control applicable to the subject vehicle at the time of the event	
21	Traffic Control	Officer or watchman	An officer or other person is assigned to controlling some aspect of the traffic flow applicable to the subject vehicle	Include crossing guard, flagman
21	Traffic Control	Traffic signal	A traffic signal (by colors or flashing) is controlling some aspect of the traffic flow applicable to the subject vehicle	
21	Traffic Control	Stop sign	A stop sign is controlling some aspect of the traffic flow applicable to the subject vehicle	
21	Traffic Control	Slow or warning sign	A slow or warning sign is controlling some aspect of traffic flow applicable to the subject vehicle (if not described more specifically in another category)	

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Variable #	Variable Name	Categories	Category Definitions	Examples and Hints
21	Traffic Control	Traffic lanes marked	There are markings on the road that contain information or warnings applicable to the driving task for the subject vehicle (use if no other types of devices are used to convey the same information). Note that GES does not include this category.	Ex. pavement markings such as crosswalks, turn arrows--use if no other controls conveying this information are present
21	Traffic Control	No passing signs	A sign indicating that the subject vehicle is in a no passing zone	
21	Traffic Control	Yield sign	A yield sign is controlling some aspect of the traffic flow applicable to the subject vehicle	
21	Traffic Control	One-way road or street	A sign indicating the presence of a one-way road or street is controlling traffic flow applicable to the subject vehicle	
21	Traffic Control	Railroad crossing with markings or signs	A railroad crossing with associated signage (including markings on the road, signs, cross bucks) is controlling some aspect of traffic flow applicable to the subject vehicle	
21	Traffic Control	Railroad crossing with signals	A railroad crossing with associated signals (including flashing lights, traffic lights) is controlling some aspect of traffic flow applicable to the subject vehicle	
21	Traffic Control	Railroad crossing with gate and signals	A railroad crossing with associated gate(s) with or without signals (including flashing lights, traffic lights) Is controlling some aspect of traffic flow applicable to the subject vehicle	
21	Traffic Control	Other	There is some type of traffic control device, not described in previous categories, controlling some aspect of traffic flow applicable to the subject vehicle	Ex. toll booths
21	Traffic Control	No analyzed data	Complete analysis is not possible due to insufficient data	Ex. Part of video is missing or not viewable
22	Relation to Junction	Non-Junction	Involved vehicles are not close to a junction (the area formed by the connection of two roadways)	Ex. normal roadway

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Variable #	Variable Name	Categories	Category Definitions	Examples and Hints
22	Relation to Junction	Intersection	Involved vehicles are at or very close to intersection (roads cross at the same grade)	See Figure 2 in Researcher Dictionary for Video Reduction Data /Ex. subject vehicle is first vehicle at intersection--include cases when the vehicle is in a middle lane where they can turn left and oncoming traffic can use that same lane and turn left (our driver's right) into parking lots, etc., includes traffic circles/code even if event was not related to the intersection
22	Relation to Junction	Intersection-related	Involved vehicles are close to an intersection (where roads cross at the same grade), either approaching or exiting the intersection	See Figure 2 in Researcher Dictionary for Video Reduction Data /Ex. subject vehicle is 2 to 3 cars back from the intersection, in a line of traffic waiting for pass through intersection/event resulted from an activity, behavior, or control related to the movement of traffic through the intersection
22	Relation to Junction	Driveway, alley access, etc.	One or more involved vehicles are on or entering/exiting a driveway, alley, or some other roadway providing access to property adjacent to the trafficway	
22	Relation to Junction	Entrance/exit ramp	One or more involved vehicles are on or entering/exiting an exit or entrance ramp (a transition roadway connecting two roadways or used for entering or exiting through-traffic lanes)	A ramp can form an intersection with a roadway as well as diverge from or merge into one, can form a channeled intersection, or can split into two ramps
22	Relation to Junction	Rail grade crossing	Involved vehicles are close to the at-grade connection of a railroad bed and roadway	
22	Relation to Junction	Interchange Area	Involved vehicles are within the boundaries of an interchange (a road junction that typically utilizes grade separation and one or more ramps to permit traffic on at least one road to pass through the junction without crossing any other traffic stream)	See Figure 3 in Researcher Dictionary for Video Reduction Data
22	Relation to Junction	Parking lot	Involved vehicles are within the boundaries of a parking lot	

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Variable #	Variable Name	Categories	Category Definitions	Examples and Hints
22	Relation to Junction	Other	Involved vehicles are related to a junction in a manner not described in other categories	
22	Relation to Junction	No analyzed data	Complete analysis is not possible due to insufficient data	Ex. Part of video is missing or not viewable
23	Alignment	Straight level	Roadway alignment is straight, profile is flat (no hills or grade)	
23	Alignment	Curve level	Roadway alignment is curved, profile is flat (no hills or grade)	
23	Alignment	Straight grade	Roadway alignment is straight, profile is graded (vehicle is going up or down a grade)	
23	Alignment	Curve grade	Roadway alignment is curved, profile is graded (vehicle is going up or down a grade)	
23	Alignment	Straight hillcrest	Roadway alignment is straight, vehicle is at a hillcrest	
23	Alignment	Curve hillcrest	Roadway alignment is curved, vehicle is at a hillcrest	
23	Alignment	Straight dip	Roadway alignment is straight, vehicle is in a dip	
23	Alignment	Other	Roadway alignment and/or profile are known, but are not described in previous categories	
23	Alignment	No analyzed data	Complete analysis is not possible due to insufficient data	Ex. Part of video is missing or not viewable
24	Locality	School	Vehicle passes any type of school building at the time of the precipitating event, including adult learning institutions	Include any training centers, universities, etc. as well as elementary and secondary schools
24	Locality	Church	Vehicle passes a church building at the time of the precipitating event	
24	Locality	Playground	Vehicle passes any type of playground or children's playing field at the time of the precipitating event	
24	Locality	Open Country	Other than the roadway, there is nothing visible during the time surrounding the precipitating event that is described in any of the other categories	Includes roadways not defined as Interstate, when no landmarks mentioned in other categories are visible
24	Locality	Business/industrial	Vehicle passes any type of business or industrial structure at the time of the precipitating factor (this category takes precedence over others)	

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Variable #	Variable Name	Categories	Category Definitions	Examples and Hints
24	Locality	Residential	Vehicle passes at least one house or evidence of a residential neighborhood at the time of the precipitating event	
24	Locality	Interstate	Vehicle is travelling on an interstate (no other category description is visible) at the time of the precipitating event	
24	Locality	Other	Locality is one not described in other categories	
24	Locality	Construction Zone	Vehicle is in a construction zone (construction equipment, barrel, etc. are visible) at the time of the precipitating event	
24	Locality	No analyzed data	Complete analysis is not possible due to insufficient data	Ex. Part of video is missing or not viewable
25	Lighting	Dawn	The time of day during the precipitating event is sunrise	
25	Lighting	Daylight	The time of day during the precipitating event is some point after dawn but before dusk	
25	Lighting	Dusk	The time of day during the precipitating event is sunset	
25	Lighting	Darkness, lighted	It is dark during the precipitating event, but the roadway is lighted	Lighted roadway includes street lamps as well as lighting coming from businesses
25	Lighting	Darkness, not lighted	It is dark during the precipitating event, and the roadway is not lighted	
25	Lighting	No analyzed data	Complete analysis is not possible due to insufficient data	Ex. Part of video is missing or not viewable
26	Weather	Clear	There are no adverse atmospheric conditions at the time of the precipitating event (no conditions described in other categories)	
26	Weather	Cloudy	There are clouds visible in the sky at the time of the precipitating event	Looks like it just rained or is going to rain
26	Weather	Fog	There is fog visible at the time of the precipitating event	
26	Weather	Mist	There is mist in the air at the time of the precipitating event	
26	Weather	Raining	It is raining at the time of the precipitating event	Check for wiper use

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Variable #	Variable Name	Categories	Category Definitions	Examples and Hints
26	Weather	Snowing	It is snowing at the time of the precipitating event	
26	Weather	Sleeting	It is sleeting at the time of the precipitating event	
26	Weather	Smoke, dust	There is smoke and/or dust, either stagnant or blowing, in the air at the time of the precipitating event	
26	Weather	Other	There is some type of adverse atmospheric condition present, not described in other categories, at the time of the precipitating event	Ex. smog, blowing sand, blowing snow, crosswind, hail
26	Weather	No analyzed data	Complete analysis is not possible due to insufficient data	Ex. Part of video is missing or not viewable
27	Driver Seatbelt Use	Lap/shoulder belt	The driver is restrained by a lap/shoulder belt combination at the time of the precipitating event	
27	Driver Seatbelt Use	Lap only	The driver is restrained by only a lap belt at the time of the precipitating event	
27	Driver Seatbelt Use	Shoulder only	The driver is restrained by only a shoulder belt at the time of the precipitating event	
27	Driver Seatbelt Use	None used	The driver is not using a lap or shoulder belt (or combination of the two)	
27	Driver Seatbelt Use	Unknown if used	Can't tell or make a judgment	
27	Driver Seatbelt Use	No analyzed data	Complete analysis is not possible due to insufficient data	Ex. Part of video is missing or not viewable