

Researcher Dictionary
for
Video Reduction Data

Version 1.1

March 4, 2009

Revision History

Version	Date	Comments
1.0	12/08/2008	First version of document
1.1	03/04/2009	Definition clarification

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 event, driver state, and driving environment information derived from video reduction. Each row in the file represents one of the 68 crashes or 760 near-crashes observed in the study.

Event Descriptions

Event narratives that provide situational context for each crash and near-crash event are provided in an associated pdf document, entitled 100CarEventNarratives_v1.pdf. These narratives can be used in conjunction with the detailed event, driver state, and driving environment variables contained in this video reduction data set to gain a better understanding of circumstances surrounding each event.

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 figures include background information utilized to evaluate the variables Event Nature, Incident Type, Relation to Junction, and Vehicle 2, 3 Location. Figures 1-3 are adapted from the General Estimates System Coding and Editing Manual, and Figure 4 is a pictorial representation of the locations described in the Vehicle 2 and Vehicle 3 Location variables.

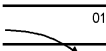
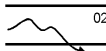
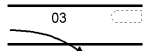
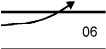
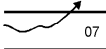
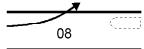
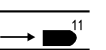
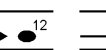
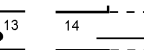


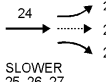
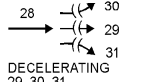

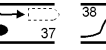
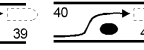

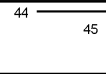
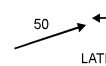
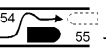
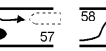
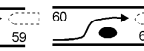

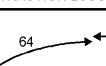

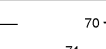
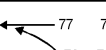

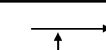

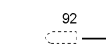

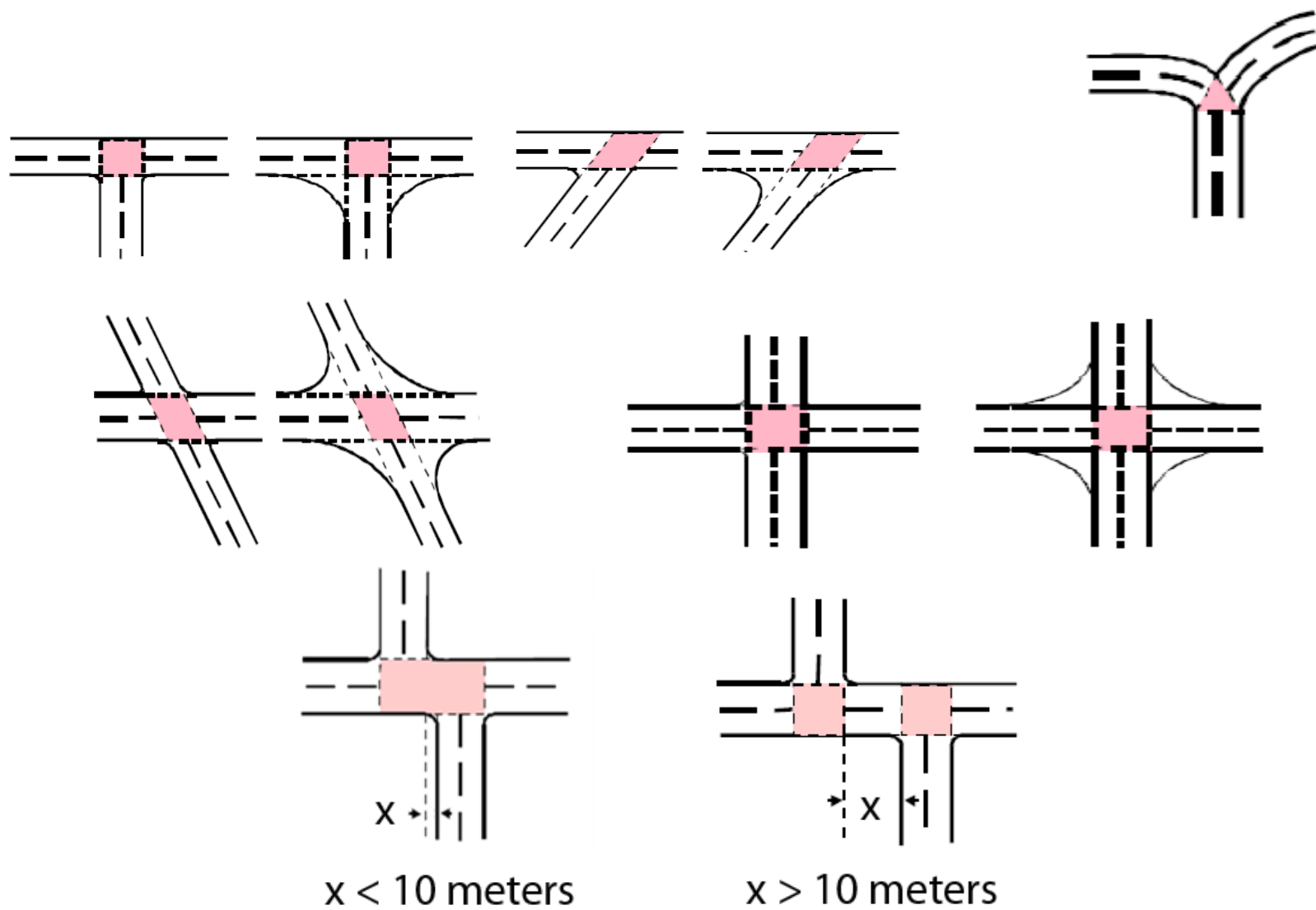
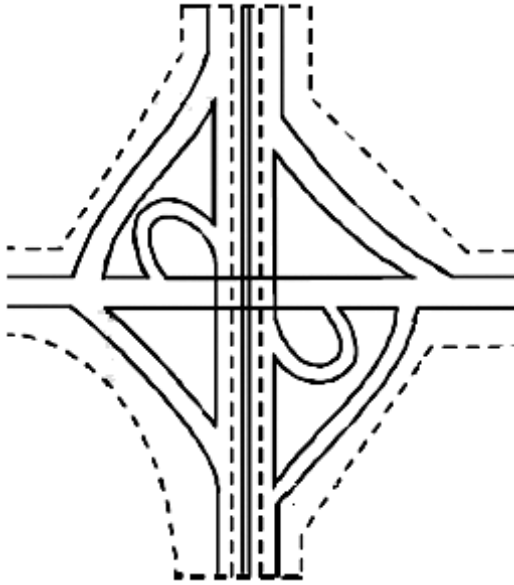
Category	Configuration	ACCIDENT TYPES (Includes Intent)					
I. Single Driver	A. Right Roadside Departure	 01 DRIVE OFF ROAD	 02 CONTROL/ TRACTION LOSS	 03 AVOID COLLISION WITH VEH., PED., ANIM.	04 SPECIFICS OTHER	05 SPECIFICS UNKNOWN	
	B. Left Roadside Departure	 06 DRIVE OFF ROAD	 07 CONTROL/ TRACTION LOSS	 08 AVOID COLLISION WITH VEH., PED., ANIM.	09 SPECIFICS OTHER	10 SPECIFICS UNKNOWN	
	C. Forward Impact	 11 PARKED VEHICLE	 12 STATIONARY OBJECT	 13 PEDESTRIAN/ ANIMAL	 14 END DEPARTURE	15 SPECIFICS OTHER	16 SPECIFICS UNKNOWN
II. Same Trafficway Same Direction	D. Rear-End	 20 STOPPED 21, 22, 23	 24 SLOWER 25, 26, 27	 28 DECELERATING 29, 30, 31	(EACH - 32) SPECIFICS OTHER	(EACH - 33) SPECIFICS UNKNOWN	
	E. Forward Impact	 34 CONTROL/ TRACTION LOSS	 36 CONTROL/ TRACTION LOSS	 38 AVOID COLLISION WITH VEHICLE	 40 AVOID COLLISION WITH OBJECT	(EACH - 42) SPECIFICS OTHER	(EACH - 43) SPECIFICS UNKNOWN
	F. Sideswipe Angle	 44 45 46 47				(EACH - 48) SPECIFICS OTHER	(EACH - 49) SPECIFICS UNKNOWN
III. Same Trafficway Opposite Direction	G. Head-On	 50 51 LATERAL MOVE			(EACH - 52) SPECIFICS OTHER	(EACH - 53) SPECIFICS UNKNOWN	
	H. Forward Impact	 54 CONTROL/ TRACTION LOSS	 56 CONTROL/ TRACTION LOSS	 58 AVOID COLLISION WITH VEHICLE	 60 AVOID COLLISION WITH OBJECT	(EACH - 62) SPECIFICS OTHER	(EACH - 63) SPECIFICS UNKNOWN
	I. Sideswipe/ Angle	 64 65 LATERAL MOVE				(EACH - 66) SPECIFICS OTHER	(EACH - 67) SPECIFICS UNKNOWN
IV. Change Trafficway Vehicle Turning	J. Turn Across Path	 68 69 INITIAL OPPOSITE DIRECTIONS	 70 71 72 INITIAL SAME DIRECTION		(EACH - 74) SPECIFICS OTHER	(EACH - 75) SPECIFICS UNKNOWN	
	K. Turn Into Path	 76 77 78 79 TURN INTO SAME DIRECTION	 80 81 82 83 TURN INTO OPPOSITE DIRECTIONS		(EACH - 84) SPECIFICS OTHER	(EACH - 85) SPECIFICS UNKNOWN	
V. Intersecting Paths (Vehicle Damage)	L. Straight Paths	 86 87	 88 89		(EACH - 90) SPECIFICS OTHER	(EACH - 91) SPECIFICS UNKNOWN	
VI. Miscellaneous	M. Backing Etc.	 92 93 BACKING VEHICLE	 94 95 OTHER VEHICLE OR OBJECT		98 OTHER ACCIDENT TYPE 99 UNKNOWN ACCIDENT TYPE 00 NO IMPACT		

Figure 1. Regarding Nature and Incident Type, GES Variable V23, from GES p. 204.



**Figure 2. Regarding Relation to Junction (Intersections), GES Variable A09,
adapted from GES pp. 58-61.**



**Figure 3. Regarding Relation to Junction (Interchange Area), GES Variable A09,
adapted from GES p. 58.**

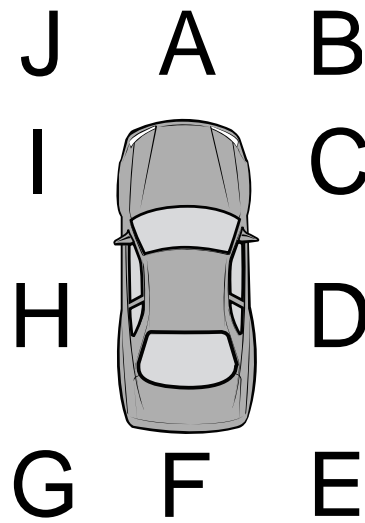


Figure 4. Regarding Car 2, 3 Location

List of Variables

The following variables are included in the text files (with the exception of Variable 53, Final Narrative, which is provided in a pdf document called 100CarEventNarratives_v1).

<u>Variable #</u>	<u>Variable Name</u>
1	Event Start
2	Event End
3	Event Severity
4	Subject Number
5	Event Nature
6	Incident Type
7	Pre-Incident Maneuver
8	Maneuver Judgment
9	Precipitating Event
10	Driver Reaction
11	Post-Maneuver Control
12	Driver Behavior 1
13	Driver Behavior 2
14	Driver Behavior 3
15	Driver Impairments
16	Infrastructure
17	Distraction 1
18	Distraction 2
19	Distraction 3
20	Distraction 1 Start Sync
21	Distraction 2 Start Sync
22	Distraction 3 Start Sync
23	Distraction 1 End Sync
24	Distraction 2 End Sync
25	Distraction 3 End Sync
26	Distraction 1 Outcome
27	Distraction 2 Outcome
28	Distraction 3 Outcome
29	Hands on the Wheel
30	Vehicle Contributing Factors
31	Visual Obstructions
32	Surface Condition
33	Traffic Flow

List of Variables

The following variables are included in the text files (with the exception of Variable 53, Final Narrative, which is provided in a pdf document called 100CarEventNarratives_v1).

<u>Variable #</u>	<u>Variable Name</u>
34	Travel Lanes
35	Traffic Density
36	Traffic Control
37	Relation to Junction
38	Alignment
39	Locality
40	Lighting
41	Weather
42	Driver Seatbelt Use
43	Number of Other Vehicles
44	Fault
45	Vehicle 2 Location
46	Vehicle 3 Location
47	Vehicle 2 Type
48	Vehicle 3 Type
49	Vehicle 2 Maneuver
50	Vehicle 3 Maneuver
51	Vehicle 2 Driver Reaction
52	Vehicle 3 Driver Reaction
53	Final Narrative

Researcher Dictionary for Video Reduction Data 12-08-08
Variable Definitions

Variable #	Variable Name	Variable Definition	GES Related Variable
1	Event 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.	
2	Event 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.	
3	Event Severity	A general term referring to all valid triggered occurrences of an incident, near-crash, or crash that begin at the precipitating event and end when the evasive maneuver has been completed.	GES codes only crashes--groups them according to type of vehicle(s) involved, vehicle damage, and individual injury type.
4	Subject Number	All primary drivers are assigned a subject number which will be a 3-digit number followed by the letter "A." Any secondary drivers will be assigned the same 3-digit number followed by the letters "B," "C," and so on.	
5	Event Nature	Specifies the type of crash or near-crash that occurred (the most harmful event, which is the most property-damaging or injury-producing event in the crash, or potential for such an event in a near-crash). Determination of the nature of the event and the envelope surrounding it will lead to the determination of other variables such as pre-incident maneuver and precipitating event.	A06 (First Harmful Event), A07 (Manner of Collision), E03 (Point of Impact (This Vehicle)), E05 (Point of Impact (Other Vehicle)), E06 (Action), V20 (Most Harmful Event), V23 (Accident Type (Category))
6	Incident Type	Indicates the type of incident, coded for crashes or near-crashes only (for the most harmful event, which is the most property-damaging or injury-producing event in the crash, or potential for such an event in a near-crash). For variables not involving pedestrians, pedalcyclists, or animals, orientation of the vehicle(s) is also indicated.	A07 (Manner of Collision), V23 (Accident Type (Category))
7	Pre-Incident Maneuver	This represents the last action that the subject vehicle driver engaged in just prior to the precipitating event (beginning anywhere from about 2 to 6 seconds before the precipitating event). This variable should be determined after the precipitating event is defined. It is a vehicle kinematic measure--based on what the vehicle does.	V21 (Vehicle Maneuver/Movement Prior to Critical Event (Precrash 1))/Also similar to VA PAR Variable 19/20

Researcher Dictionary for Video Reduction Data 12-08-08
Variable Definitions

Variable #	Variable Name	Variable Definition	GES Related Variable
8	Maneuver Judgment	Judgment of the attributes of the pre-incident maneuver. This is a vehicle kinematic measure-based on what the vehicle does, not on driver behavior (ex. drowsy or sleepy driver is not taken into account for this variable).	
9	Precipitating Event	The state of environment or action that began the sequence--what state or action by this vehicle, another vehicle, person, animal or non-fixed object was critical to this vehicle becoming involved in the crash or near-crash? This is a vehicle kinematic measure (based on what the vehicle does--an action, not a behavior). It occurs outside the vehicle and does not include driver distraction, fatigue, or disciplining child while driving. This is the critical event which made the crash or near-crash possible. Use the "but for" test--"but for this event, would the crash or near-crash have occurred?" This is independent of who caused the conflict (fault)--for example, Vehicle A is speeding, then Vehicle B crosses Vehicle A's path, the precipitating event would be Vehicle B crossing Vehicle A's path. If two events occur simultaneously, choose the event that imparted the greatest effect on the crash or near-crash. If more than one sequential event contributed to the crash or near-crash, determination of which is the precipitating event depends upon whether the driver had enough time or vehicular control to avoid the latter event. If the driver avoids one event and immediately encounters another potentially harmful event (with no time or ability to avoid the latter), then the precipitating event is the first	V26 (Critical Event- Precrash 2 (Event))
10	Driver Reaction	The subject driver's reaction or evasive maneuver in response to the precipitating event. This is independent of maneuvers associated with the resulting crash or near-crash. This is a vehicle kinematic measure--based on what the vehicle does.	V27 (Corrective Action Attempted - Precrash 3)
11	Post-Maneuver Control	Subject vehicle response after avoidance maneuver until the point of crash or near-crash (do not consider stability of the vehicle before the corrective action).	V28 (Vehicle Control - Precrash 4)

Variable Definitions

Variable #	Variable Name	Variable Definition	GES Related Variable
12, 13, 14	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
15	Driver Impairments	Possible reasons for the observed driver behavior(s), judgment, or driving ability. More than one category may be assigned.	P18 (Person's Physical Impairments (Drivers)), P11 (Police-Reported Alcohol Involvement), P17 (Police-Reported Drug Involvement) [NOTE: GES does not account for the conditions "anger" and "other emotional state"]
16	Infrastructure	Judgment providing a possible reason for the previously marked driver behavior(s), wherein some aspect of the roadway design impacted the driver's ability to safely navigate the roadway. These categories are not in order of importance or level of effect.	
17, 18, 19	Distraction 1, 2, 3	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)
20, 21, 22	Distraction 1, 2, 3 Start Sync	The time at which the driver became distracted or began to engage in the distracting task.	
23, 24, 25	Distraction 1, 2, 3 End Sync	The time at which the driver disengaged from the distracting task or the driver's attention returned to the forward roadway.	
26, 27, 28	Distraction 1, 2, 3 Outcome	Determination of whether the distraction contributed to the precipitating event (not whether the factor caused the event, but was a major contribution).	
29	Hands on the Wheel	A description of how many and/or which hands the driver had on the steering wheel at the start of the precipitating event (some part of the hand must be touching the wheel).	

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Variable Definitions

Variable #	Variable Name	Variable Definition	GES Related Variable
30	Vehicle Contributing Factors	Factors that may have contributed to the precipitating event that involve the mechanical functioning and/or mechanical flaws of the vehicle. Only include if factor can be seen as clearly contributing to the severity or presence of an event.	V12 Vehicle Contributing Factors
31	Visual Obstructions	Visual factors that may have contributed to the cause of the precipitating event (obstructions must be clearly present or reported by the driver).	D04 (Driver's Vision Obscured By)
32	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
33	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)
34	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)
35	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.	
36	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

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Variable Definitions

Variable #	Variable Name	Variable Definition	GES Related Variable
37	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))
38	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/ <i>VA PAR Variable 3</i>
39	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/ <i>VA PAR Variable 8</i>
40	Lighting	Lighting condition at the time of the start of the precipitating event.	A19 (Lighting Condition)/ <i>VA PAR Variable 7</i>
41	Weather	Weather condition at the time of the start of the precipitating event.	A20 (Atmospheric Condition)/ <i>VA PAR Variable 4</i>
42	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))
43	Number of Other Vehicles	Other than the subject vehicle, number of vehicles (including in-transport and parked), pedestrians, pedalcyclists, animals, and objects involved in the crash or near-crash, or that restrict the subject vehicle's ability to maneuver at the time of the start of the precipitating event (car 1 is subject vehicle). Exception: medians and barriers are not considered to be objects in this category. NOTE: GES variable includes only the number of other in-transport vehicles involved.	A03 (Number of Motor Vehicles)

Variable Definitions

Variable #	Variable Name	Variable Definition	GES Related Variable
44	Fault	Which driver (if any) committed an error. If the other vehicle or pedestrian caused the event, label that other vehicle or pedestrian as Driver 2. Only code a fault if there is observable evidence.	
45, 46	Vehicle 2, 3 Location	Position of other vehicle, pedestrian, pedalcyclist, animal, or object that is involved in the event or that restricts the subject vehicle's ability to maneuver at the time of the start of the precipitating event (car 1 is subject vehicle). Exception: medians and barriers are not considered to be objects in this category.	
47, 48	Vehicle 2, 3 Type	Type of other vehicle that is involved in the event or that restricts the subject vehicle's ability to maneuver at the time of the start of the precipitating event.	V5 (Body Type)
49, 50	Vehicle 2, 3 Maneuver	Actions of the other vehicle at the start of the precipitating event (only code if the vehicle is clear in the camera view). If the other vehicle initiated the precipitating factor (ex. encroaching into subject vehicle lane during lane change), the car 2 maneuver would be the action that initiated that action (ex. changing lanes). Note: if the other "vehicle" is a pedestrian, animal, or object, code this variable as "Other."	
51, 52	Vehicle 2, 3 Driver Reaction	The other driver's reaction or evasive maneuver in response to the precipitating event (only code if observable reactions). If the other driver initiated the precipitating event, this category would be the immediate reaction to the result(s) of the precipitating event. This is a vehicle kinematic measure-based on what the vehicle does. Note: if the other "vehicle" is a pedestrian, animal, or object, code this variable as "Other actions."	
53	Final Narrative	Open-ended description of the event.	

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Category Definitions and Hints

Variable #	Variable Name	Categories	Category Definitions	Examples and Hints
1	Event Start	n/a		
2	Event End	n/a		
3	Event Severity	Crash	Any contact with an object, either moving or fixed, at any speed in which kinetic energy is measurably transferred or dissipated.	Includes other vehicles, roadside barriers, objects on or off of the roadway, pedestrians, cyclists or animals.
3	Event Severity	Near-Crash	Any circumstance that requires a rapid, evasive maneuver by the subject vehicle, or any other vehicle, pedestrian, cyclist, or animal to avoid a crash. A rapid, evasive maneuver is defined as a steering, braking, accelerating, or any combination of control inputs that approaches the limits of the vehicle capabilities.	General guideline: subject vehicle braking greater than 0.5 g or steering input that results in a lateral acceleration greater than 0.4 g to avoid a crash constitutes a rapid maneuver.
3	Event Severity	Crash-Relevant	Any circumstance that requires a crash avoidance response on the part of the subject vehicle, any other vehicle, pedestrian, cyclist, or animal that is less severe than a rapid evasive maneuver (as defined above), but greater in severity than a “normal maneuver” to avoid a crash. A crash avoidance response can include braking, steering, accelerating, or any combination of control inputs.	A “normal maneuver” for the subject vehicle is defined as a control input that falls outside of the 99% confidence limit for control input as measured for the same subject.
3	Event Severity	Proximity Conflict	Any circumstance resulting in extraordinarily close proximity of the subject vehicle to any other vehicle, pedestrian, cyclist, animal, or fixed object where, due to apparent unawareness on the part of the driver(s), pedestrians, cyclists or animals, there is no avoidance maneuver or response. Extraordinarily close proximity is defined as a clear case where the absence of an avoidance maneuver or response is inappropriate for the driving circumstances (including speed, sight distance, etc.).	

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Category Definitions and Hints

Variable #	Variable Name	Categories	Category Definitions	Examples and Hints
3	Event Severity	Non-Conflict	Any incident that increases the level of risk associated with driving, but does not result in a crash, near-crash, or conflict as defined above. Examples include driver control error without proximal hazards being present, driver judgment error such as unsafe tailgating or excessive speed, or cases in which drivers are visually distracted to an unsafe level	Ex. driver control error without proximal hazards being present; driver judgment error such as unsafe tailgating or excessive speed; or cases in which drivers are visually distracted to an unsafe level
3	Event Severity	Non-Subject Conflict	Any incident that gets captured on video, crash-relevant, near-crash, or crash, that does not involve the subject driver.	
4	Subject Number	n/a		
5	Event Nature	Conflict with a lead vehicle	Interaction with a vehicle in front of the subject vehicle (traveling in the same direction as the subject vehicle or stopped)	See Figure 1 in Researcher Dictionary for Video Reduction Data
5	Event Nature	Conflict with a following vehicle	Interaction with a vehicle behind the subject vehicle (traveling in the same direction as the subject vehicle)	See Figure 1 in Researcher Dictionary for Video Reduction Data
5	Event Nature	Conflict with oncoming traffic	Interaction with a vehicle traveling toward the subject vehicle (traveling in the opposite direction as the subject vehicle)	See Figure 1 in Researcher Dictionary for Video Reduction Data
5	Event Nature	Conflict with vehicle in adjacent lane	Interaction with a vehicle traveling in the same direction in the lane next to the subject vehicle	See Figure 1 in Researcher Dictionary for Video Reduction Data
5	Event Nature	Conflict with merging vehicle	Interaction involving a vehicle merging into another vehicle's lane from an entrance or exit ramp	See Figure 1 in Researcher Dictionary for Video Reduction Data
5	Event Nature	Conflict with vehicle turning across another vehicle path (same direction)	Interaction involving a vehicle crossing in front of the path of another vehicle (originally traveling in the same direction as the other vehicle)	See Figure 1 in Researcher Dictionary for Video Reduction Data
5	Event Nature	Conflict with vehicle turning across another vehicle path (opposite direction)	Interaction with a vehicle crossing in front of the path of another vehicle (originally traveling in the opposite direction as the other vehicle)	See Figure 1 in Researcher Dictionary for Video Reduction Data

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Category Definitions and Hints

Variable #	Variable Name	Categories	Category Definitions	Examples and Hints
5	Event Nature	Conflict with vehicle turning into another vehicle path (same direction)	Interaction with a vehicle turning into the path of another vehicle (intending to be in that lane and intending to travel in the same direction as the other vehicle)	See Figure 1 in Researcher Dictionary for Video Reduction Data
5	Event Nature	Conflict with vehicle turning into another vehicle path (opposite direction)	Interaction with a vehicle turning into the path of another vehicle (intending to be in same trafficway and intending to travel in the opposite direction as the other vehicle)	See Figure 1 in Researcher Dictionary for Video Reduction Data
5	Event Nature	Conflict with vehicle moving across another vehicle path (through intersection)	Interaction with a vehicle crossing through the path of another vehicle (traveling perpendicularly to the other vehicle, through an intersection)	See Figure 1 in Researcher Dictionary for Video Reduction Data
5	Event Nature	Conflict with parked vehicle	Interaction with a vehicle that is neither on the roadway nor in motion	A vehicle parked off the roadway with its door open over a roadway is not in-transport/See Figure 1 in Researcher Dictionary for Video Reduction Data
5	Event Nature	Conflict with pedestrian	Interaction with a pedestrian (any person who is on a trafficway or on a sidewalk or path contiguous with a trafficway, and who is not in or on a non-motorist conveyance, including persons who are in contact with the ground, roadway, etc., but who are holding onto a vehicle).	A non-motorist conveyance is a human-powered device by which a non-motorist may move or may move another non-motorist (includes baby carriage, coaster wagon, ice skates, roller skates, push cart, scooter, skate board, skis, sled, wheel chair, rickshaw, but does NOT include pedalcyclists)/See Figure 1 in Researcher Dictionary for Video Reduction Data
5	Event Nature	Conflict with pedalcyclist	Interaction with a person on any type of self-propelled pedaled cycle, either driver or passenger, including bicycles, tricycles, and unicycles (includes pedalcyclists who hold onto a motor vehicle in motion).	See Figure 1 in Researcher Dictionary for Video Reduction Data

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Category Definitions and Hints

Variable #	Variable Name	Categories	Category Definitions	Examples and Hints
5	Event Nature	Conflict with animal	Interaction with any type of living animal close to the subject vehicle (other than an animal being used as transportation or to draw some type of transportation device)	See Figure 1 in Researcher Dictionary for Video Reduction Data
5	Event Nature	Conflict with obstacle/object in roadway	Interaction with any type of inanimate obstacle or object (other than another vehicle) in the roadway	If object or obstacle is not on roadway, do not include (e.g., conflict with object off of shoulder, such as a barrier, would be coded as single vehicle conflict)/See Figure 1 in Researcher Dictionary for Video Reduction Data
5	Event Nature	Single vehicle conflict	Any non-motor vehicle conflict occurring on or off the roadway not described in other categories	Includes interaction with barriers; tree crash; driving off of the road
5	Event Nature	Other	Interaction with any non-motorist conveyance, non-motorist, or motorist not included in the other categories	Non-motorist conveyance includes baby carriage, coaster wagon, ice skates, roller skates, push cart, scooter, skate board, skis, sled, wheel chair, rickshaw, etc. Non-motorist includes persons riding on an animal or animal-powered conveyance and any person outside a sidewalk or path contiguous with a trafficway.
5	Event Nature	No known conflict (non-conflict incidents)	Incident that increases the level of risk associated with driving, but does not result in a crash, near-crash, or conflict	Ex. tailgating, speeding, distraction, not resulting in crash, near-crash, or conflict
5	Event Nature	Unknown conflict	Can't tell or make a judgment	Ex. car swerves, but can't see anything in the road (crash-relevant)
5	Event Nature	No analyzed data	Complete analysis is not possible due to insufficient data	Ex. Part of video is missing or not viewable
6	Incident Type	Rear-end, striking	Subject vehicle made contact or nearly made contact with any portion of the back (point of impact is or would have been the back plane) of the vehicle in front	See Figure 1 in Researcher Dictionary for Video Reduction Data

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Category Definitions and Hints

Variable #	Variable Name	Categories	Category Definitions	Examples and Hints
6	Incident Type	Rear-end, struck	Vehicle behind made contact or nearly made contact with any portion of the back (point of impact is or would have been the back plane) of the subject vehicle	See Figure 1 in Researcher Dictionary for Video Reduction Data
6	Incident Type	Road departure (left or right)	Any tire on the subject vehicle leaves the roadway (beyond the shoulder or onto median, on the left or right side of the roadway)	See Figure 1 in Researcher Dictionary for Video Reduction Data; Includes interactions with barriers
6	Incident Type	Road departure (end)	Any tire on the subject vehicle leaves the roadway (in the front or back of the roadway)	See Figure 1 in Researcher Dictionary for Video Reduction Data
6	Incident Type	Sideswipe, same direction (left or right)	Subject vehicle is struck/nearly struck or strikes/nearly strikes another vehicle on the side (point of impact is side plane), and the vehicles were traveling in the same direction	See Figure 1 in Researcher Dictionary for Video Reduction Data; If other category on list is sideswiped, categorize it as that category rather than sideswipe (ex. pedalcyclist)
6	Incident Type	Opposite direction (head-on or sideswipe)	Vehicles make contact or nearly make contact in the front (point of impact is or would have been front plane) or side (point of impact is or would have been side plane), and the vehicles were traveling in opposite directions	See Figure 1 in Researcher Dictionary for Video Reduction Data
6	Incident Type	Violation of stop sign or signal at intersection	Vehicle passes through intersection without stopping at an intersection with a stop sign, or passes through an intersection during a red light	See Figure 1 in Researcher Dictionary for Video Reduction Data
6	Incident Type	Straight crossing path, not involving sign/signal violation	Vehicle crosses another vehicle path perpendicularly, not due to sign or signal violation (both vehicles intending to proceed straight)	See Figure 1 in Researcher Dictionary for Video Reduction Data
6	Incident Type	Turn across path	Vehicle crosses in front of the path of another vehicle (the vehicles were initially on the same trafficway when one vehicle tried to turn onto another trafficway and pulled in front of the other vehicle)	See Figure 1 in Researcher Dictionary for Video Reduction Data; Should be reserved only for crashes/near-crashes that occur in intersections (not, for example, in parking lots)—Incident Type “Other” should be used otherwise

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Category Definitions and Hints

Variable #	Variable Name	Categories	Category Definitions	Examples and Hints
6	Incident Type	Turn into path (same direction)	Vehicle turns into the path of another vehicle (initially on different trafficways, traveling in the same direction, but intending to be in the same lane as the other vehicle)	See Figure 1 in Researcher Dictionary for Video Reduction Data; Should be reserved only for crashes/near-crashes that occur in intersections (not, for example, in parking lots)—Incident Type “Other” should be used otherwise
6	Incident Type	Turn into path (opposite direction)	Vehicle turns into the path of another vehicle (initially on different trafficways, traveling in the opposite direction, but intending to be in the same lane or trafficway as the other vehicle)	See Figure 1 in Researcher Dictionary for Video Reduction Data; Should be reserved only for crashes/near-crashes that occur in intersections (not, for example, in parking lots)—Incident Type “Other” should be used otherwise
6	Incident Type	Backing, fixed object	Vehicle backs into a non-moving, fixed object	See Figure 1 in Researcher Dictionary for Video Reduction Data
6	Incident Type	Backing into traffic	Vehicle backs into traffic flow	See Figure 1 in Researcher Dictionary for Video Reduction Data
6	Incident Type	Pedestrian	Interaction with a pedestrian (any person who is on a trafficway or on a sidewalk or path contiguous with a trafficway, and who is not in or on a non-motorist conveyance, including persons who are in contact with the roadway, but are holding on to a vehicle).	
6	Incident Type	Pedalcyclist	Interaction with a person on any type of self-propelled pedaled cycle, either driver or passenger (which is on a trafficway or on a sidewalk or path contiguous with a trafficway), including bicycles, tricycles, and unicycles (includes pedalcyclists who hold onto a motor vehicle in motion).	
6	Incident Type	Animal	Interaction with any type of living or dead animal (which is on a trafficway or on a sidewalk or path contiguous with a trafficway)	

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Variable #	Variable Name	Categories	Category Definitions	Examples and Hints
6	Incident Type	Other (specify)	Interaction with any non-motorist conveyance (any human-powered device by which a non-motorist may move, or by which a pedestrian or non-motorist may move another non-motorist, other than by pedaling). non-motorist, or motorist not included in the other categories	Non-motorist conveyance includes baby carriage, coaster wagon, ice skates, roller skates, push cart, scooter, skate board, skis, sled, wheel chair, rickshaw, etc. Non-motorist includes persons riding on an animal or animal-powered conveyance and any person outside a sidewalk or path contiguous with a trafficway.
6	Incident Type	No analyzed data	Complete analysis is not possible due to insufficient data	Ex. Part of video is missing or not viewable
7	Pre-Incident Maneuver	Going straight, constant speed	Subject vehicle is traveling straight at a longitudinal acceleration (generally) less than + 0.25 g (straight travel path need not be very long)	
7	Pre-Incident Maneuver	Going straight, accelerating	Subject vehicle is traveling straight at a longitudinal acceleration (generally) greater than + 0.25 g (straight travel path need not be very long)	If the driver was also involved in any other maneuver (ex. starting in traffic), code that maneuver
7	Pre-Incident Maneuver	Going straight, but with unintentional "drifting" within lane or across lanes	Subject vehicle is traveling generally straight, but with occasional variance within travel lane or into adjacent lane	
7	Pre-Incident Maneuver	Decelerating in traffic lane	Subject vehicle is traveling in lane at a longitudinal acceleration (generally) less than - 0.25 g	If the driver was also involved in any other maneuver (ex. passing or overtaking), code that maneuver
7	Pre-Incident Maneuver	Starting in traffic lane	Subject vehicle is in the process of accelerating from a stopped position in the travel lane (car was idling)	Ex. starting from a stop at a traffic signal
7	Pre-Incident Maneuver	Stopped in traffic lane	Subject vehicle is stopped in travel lane, speed indicator reading 0 mph (not parked or disabled, but car is idling)	Ex. stopped at red light
7	Pre-Incident Maneuver	Passing or overtaking another vehicle	Subject vehicle is traveling straight ahead and is in the process of moving ahead of another vehicle on the left or right	

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Variable #	Variable Name	Categories	Category Definitions	Examples and Hints
7	Pre-Incident Maneuver	Disabled or parked in travel lane	Subject vehicle is stopped in travel lane, speed indicator reading 0 mph (due to being parked or disabled, car not idling), regardless of whether the driver is in the vehicle	
7	Pre-Incident Maneuver	Leaving a parked position	Subject vehicle is in the process of moving into the travel lane from a parking area (parallel or diagonal) adjacent to the traffic lane(s) (car had previously been stopped and turned off)	Include cases when the vehicle is leaving the parking place but is in the process of changing gears (e.g., reverse to forward) when the event occurs
7	Pre-Incident Maneuver	Entering a parked position	Subject vehicle is in the process of moving into a parked area (parallel or diagonal) adjacent to the traffic lane(s) from the travel lane (intending for car to be stopped and turned off)	Vehicle may be in forward or reverse gear/If vehicle is decelerating in preparation for parking, code as "Decelerating in traffic lane"
7	Pre-Incident Maneuver	Turning right	Subject vehicle is making a turn to the right after traveling forward, intending to travel in that direction on a different roadway (other than for the purpose of avoiding an animal, pedestrian, pedalcyclist, or other vehicle)	Ex. Vehicle turning from or into a driveway, parking lot, or intersection
7	Pre-Incident Maneuver	Turning left	Subject vehicle is making a turn to the left after traveling forward, intending to travel in that direction on a different roadway (other than for the purpose of avoiding an animal, pedestrian, pedalcyclist, or other vehicle)	Ex. Vehicle turning from or into a driveway, parking lot, or intersection
7	Pre-Incident Maneuver	Making U-turn	Subject vehicle is making a 180-degree directional turn in the roadway, intending to travel in the opposite direction	
7	Pre-Incident Maneuver	Backing up (other than for parking purposes)	Subject vehicle is traveling backwards within the trafficway for a purpose other than entering or exiting a parked position	
7	Pre-Incident Maneuver	Negotiating a curve	Subject vehicle is in the process of traveling on a roadway that has (at that point) some curvature to the right or left	

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Category Definitions and Hints

Variable #	Variable Name	Categories	Category Definitions	Examples and Hints
7	Pre-Incident Maneuver	Changing lanes	Subject vehicle is traveling straight ahead and is in the process of changing from one travel lane to the adjacent one (left or right) while on the same roadway (if unplanned lane change, for the purpose of avoiding an animal, pedestrian, pedalcyclist, or other vehicle, code as the appropriate avoidance maneuver)	
7	Pre-Incident Maneuver	Merging	Subject vehicle is moving forward and in the process of merging from the left or right into a traffic lane	Ex. roadway narrows, entrance/exit ramps
7	Pre-Incident Maneuver	Maneuvering to avoid an animal	Subject vehicle engages in a steering action whose purpose is solely to avoid contact with a live animal (in motion or not)	
7	Pre-Incident Maneuver	Maneuvering to avoid a pedestrian/pedalcyclist	Subject vehicle engages in a steering action with the sole purpose of avoiding contact with a pedestrian or pedalcyclist. A pedestrian is any person who is on a trafficway or on a sidewalk or path contiguous with a trafficway, and who is not in or on a non-motorist conveyance - this includes persons who are in contact with the ground, roadway, etc., but who are holding onto a vehicle. A pedalcyclist is a person on any type of self-propelled pedaled cycle, either driver or passenger, including bicycles, tricycles, and unicycles (includes pedalcyclists who hold onto a motor vehicle in motion).	
7	Pre-Incident Maneuver	Maneuvering to avoid an object	Subject vehicle engages in a steering action with the sole purpose of avoiding contact with any type of inanimate obstacle or object (other than another vehicle)	
7	Pre-Incident Maneuver	Maneuvering to avoid a vehicle	Subject vehicle engages in a steering action with the sole purpose of avoiding contact with another vehicle	Other vehicle can be moving or not, occupied or not
7	Pre-Incident Maneuver	Other	Other action not included in previous categories	Ex. vehicle travels the wrong way on a one-way street, vehicle is pushed by another vehicle or pedestrian

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Category Definitions and Hints

Variable #	Variable Name	Categories	Category Definitions	Examples and Hints
7	Pre-Incident Maneuver	Unknown	Can't tell or make a judgment	
7	Pre-Incident Maneuver	No analyzed data	Complete analysis is not possible due to insufficient data	Ex. Part of video is missing or not viewable
8	Maneuver Judgment	Safe and legal	The pre-incident maneuver was safe and legal, based on vehicle kinematics	
8	Maneuver Judgment	Unsafe but legal	The pre-incident maneuver was unsafe but legal, based on vehicle kinematics	
8	Maneuver Judgment	Safe but illegal	The pre-incident maneuver was safe but illegal, based on vehicle kinematics	
8	Maneuver Judgment	Unsafe and illegal	The pre-incident maneuver was unsafe and illegal, based on vehicle kinematics	
8	Maneuver Judgment	Unknown	Can't tell or make a judgment	
8	Maneuver Judgment	No analyzed data	Complete analysis is not possible due to insufficient data	Ex. Part of video is missing or not viewable
9	Precipitating Event	This Vehicle Lost Control - Blow-out or flat tire	Driver of subject vehicle loses some amount of vehicular control due to tire "air out"	
9	Precipitating Event	This Vehicle Lost Control - Stalled engine	Driver of subject vehicle loses some amount of vehicular control due to loss of engine power	Stalled engine must precipitate the event, rather than have been ongoing for some time before the event (such as a vehicle stopped in the road due to a stalled engine)
9	Precipitating Event	This Vehicle Lost Control - Disabling vehicle failure	Driver of subject vehicle loses some amount of vehicular control due to a mechanical malfunction of a component (other than stalled engine), which prevents the vehicle from being drivable	Ex. wheel fell off, steering or suspension system failure
9	Precipitating Event	This Vehicle Lost Control - Minor vehicle failure	Driver of subject vehicle loses some amount of vehicular control due to a mechanical abnormality (other than stalled engine), but vehicle is still drivable	Ex. car hood flew up

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Category Definitions and Hints

Variable #	Variable Name	Categories	Category Definitions	Examples and Hints
9	Precipitating Event	This Vehicle Lost Control - Poor road conditions	Driver of subject vehicle loses some amount of vehicular control due to poor environmental or structural conditions of the roadway surface	Condition must precipitate the event, rather than have been ongoing for some time before the event/Ex. puddle, pothole, a patch of ice, rather than an ice-covered or wet roadway
9	Precipitating Event	This Vehicle Lost Control - Excessive speed	Driver of subject vehicle loses some amount of vehicular control due to traveling too fast for the driving conditions	Over 10 mph above posted speed limit
9	Precipitating Event	This Vehicle Lost Control - Other cause	Driver of subject vehicle loses some amount of vehicular control, and the loss of control was due to some recognized reason not described in previous categories	Ongoing conditions may be addressed here, such as an ice-covered road on which the driver is traveling too fast
9	Precipitating Event	This Vehicle Lost Control - Unknown cause	Driver of subject vehicle loses some amount of vehicular control, but the cause (ex. vehicular or environmental cause) is unknown	
9	Precipitating Event	Subject over left lane line	Subject vehicle departs its lane to the left and is entering or has entered adjoining lane or shoulder (note: for cases not included in categories "Subject lane change - left behind vehicle/left in front of vehicle/left, sideswipe threat/left, other")--in general, this would be a vehicle departing its lane to the left into a lane with opposing travel	Crash or near-crash occurs before vehicle leaves the roadway (not past the shoulder area or onto median)/Code only if lane departure is a direct factor in the event--for example, if vehicle crosses lane line, then an animal runs in its path, the factor would be "animal in roadway"
9	Precipitating Event	Subject over right lane line	Subject vehicle departs its lane to the right and is entering or has entered adjoining lane or shoulder (note: for cases not included in categories "Subject lane change - right behind vehicle/right in front of vehicle/right, sideswipe threat/right, other")--in general, this would be a vehicle departing its lane to the right into a lane with opposing travel	Crash or near-crash occurs before vehicle leaves the roadway (not past the shoulder area or onto median)/Code only if lane departure is a direct factor in the event--for example, if vehicle crosses lane line, then an animal runs in its path, the factor would be "animal in roadway"
9	Precipitating Event	Subject over left edge of road	Subject vehicle departs the roadway beyond the left side shoulder area or onto a median (first harmful or potentially harmful event occurs off of roadway)	Crash or near-crash occurs after vehicle has left the shoulder area or entered median

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Variable #	Variable Name	Categories	Category Definitions	Examples and Hints
9	Precipitating Event	Subject over right edge of road	Subject vehicle departs the roadway beyond the right side shoulder area or onto a median (first harmful or potentially harmful event occurs off of roadway)	Crash or near-crash occurs after vehicle has left the shoulder area or entered median
9	Precipitating Event	Subject vehicle: End departure	Subject vehicle departs the end of a roadway	Ex. vehicle runs off of road at a "T" intersection
9	Precipitating Event	Subject in intersection - turning left	Subject vehicle attempts a left turn from its roadway to another roadway, driveway, or ramp	
9	Precipitating Event	Subject in intersection - turning right	Subject vehicle attempts a right turn from its roadway to another roadway, driveway, or ramp	
9	Precipitating Event	Subject in intersection - passing through	Subject vehicle is proceeding through an intersection without planning to make a turn	
9	Precipitating Event	Subject Ahead, stopped on roadway more than 2 seconds	Subject vehicle has been stopped on the roadway for more than 2 seconds when crash or near-crash occurs, and is the lead vehicle in the event	Vehicle is stopped, parked, or disabled
9	Precipitating Event	Subject Ahead, slowed and stopped 2 seconds or less	Subject vehicle is decelerating to a stop or has just stopped (has been stopped for 2 seconds or less) when crash or near-crash occurs, and is the lead vehicle in the event	Vehicle is nearly or completely stopped, rather than in a longer process of decelerating (in that case, code as "Subject ahead, but decelerating")
9	Precipitating Event	Subject lane change - left behind vehicle	Subject vehicle departs its lane to the left and is entering or has entered adjoining lane behind a leading vehicle in that lane (traveling in the same direction), contacting or nearly contacting the rear portion of that lead vehicle	Usually seen with passing vehicles or lane change
9	Precipitating Event	Subject lane change - right behind vehicle	Subject vehicle departs its lane to the right and is entering or has entered adjoining lane behind a leading vehicle in that lane (traveling in the same direction), contacting or nearly contacting the rear portion of that lead vehicle	Usually seen with passing vehicles or lane change

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Variable #	Variable Name	Categories	Category Definitions	Examples and Hints
9	Precipitating Event	Subject lane change - left in front of vehicle	Subject vehicle departs its lane to the left and is entering or has entered adjoining lane in front of another vehicle in that lane (traveling in the same direction), contacting or nearly contacting the front portion of that following vehicle	
9	Precipitating Event	Subject lane change - right in front of vehicle	Subject vehicle departs its lane to the right and is entering or has entered adjoining lane in front of another vehicle in that lane (traveling in the same direction), contacting or nearly contacting the front portion of that following vehicle	
9	Precipitating Event	Subject lane change - left, sideswipe threat	Subject vehicle is traveling in the adjacent right lane, beside and in the same direction as other vehicle, and crosses left lane line (i.e., other vehicle's right lane line), resulting in contact or near-contact between the left side of this vehicle and the right side of the other vehicle	
9	Precipitating Event	Subject lane change - right, sideswipe threat	Subject vehicle is traveling in the adjacent left lane, beside and in the same direction as other vehicle, and crosses right lane line (i.e., other vehicle's left lane line), resulting in contact or near-contact between the right side of this vehicle and the left side of the other vehicle	
9	Precipitating Event	Subject lane change - left, other	Subject vehicle is traveling in the adjacent right lane, in the same direction as other vehicle, and crosses left lane line (i.e., other vehicle's right lane line) in a manner not described in other categories	
9	Precipitating Event	Subject lane change - right, other	Subject vehicle is traveling in the adjacent left lane, in the same direction as other vehicle, and crosses right lane line (i.e., other vehicle's left lane line) in a manner not described in other categories	
9	Precipitating Event	Subject ahead, but decelerating	Subject vehicle is decelerating, traveling in the same lane ahead of (and in same direction as) other vehicle involved in the crash or near-crash	

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Category Definitions and Hints

Variable #	Variable Name	Categories	Category Definitions	Examples and Hints
9	Precipitating Event	Subject ahead, but at a slower constant speed	Subject vehicle is traveling at a lower constant speed in the same lane ahead of (and in the same direction as) other vehicle involved in the crash or near-crash	
9	Precipitating Event	Other vehicle ahead - stopped on roadway more than 2 seconds	A vehicle (not in motion) is ahead in subject vehicle's lane, and has been stopped for more than 2 seconds when the crash or near-crash occurs	Other vehicle is stopped, parked, or disabled
9	Precipitating Event	Other vehicle ahead - slowed and stopped 2 seconds or less	A vehicle is decelerating to a stop or has just stopped ahead in subject vehicle's lane (has been stopped for 2 seconds or less) when crash or near-crash occurs	Vehicle is nearly or completely stopped, rather than in a longer process of decelerating (in that case, code as "Other vehicle ahead, but decelerating")
9	Precipitating Event	Other vehicle ahead, but at a slower constant speed	Other vehicle is traveling at a lower constant speed ahead of (and in the same lane and direction) as subject vehicle	
9	Precipitating Event	Other vehicle ahead, but decelerating	Other vehicle is decelerating, traveling ahead of (and in same lane and direction) as subject vehicle	If both the lead vehicle and subject vehicle are initially decelerating at the same rate, the precipitating event would begin when the lead vehicle begins deceleration at a higher rate (thus decreasing the headway between lead and subject vehicle)
9	Precipitating Event	Other vehicle ahead, and accelerating	Other vehicle is accelerating or traveling at a higher speed, ahead of (and in same lane and direction) as subject vehicle	
9	Precipitating Event	Other vehicle - traveling in opposite direction	Other vehicle is in subject vehicle's travel lane and traveling head-on in the opposite direction of subject vehicle	
9	Precipitating Event	Other vehicle - in crossover	Other vehicle enters a crossover (a designated opening with a median used primarily for U-turns) already occupied by subject vehicle	

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Category Definitions and Hints

Variable #	Variable Name	Categories	Category Definitions	Examples and Hints
9	Precipitating Event	Other vehicle - backing	Other vehicle is in the process of backing up while in subject vehicle's travel lane or path of travel (other than cases described in other categories in which a vehicle backing and is completely or partially in the subject vehicle lane)	This includes a vehicle backing out of a parking space into the subject vehicle's path. If the vehicle movement also fits the description of another category (such as "Other vehicle from driveway - straight across path"), code as such, rather than using this category
9	Precipitating Event	Other vehicle lane change - left in front of subject	Other vehicle is traveling in the adjacent lane, ahead of and in the same direction as subject vehicle, and crosses subject vehicle's left lane line (i.e., other vehicle crosses its right lane line), resulting in contact or near-contact between the front of subject vehicle and rear of the other vehicle	Lane lines are from subject vehicle's point of view (left or right)
9	Precipitating Event	Other vehicle lane change - left behind subject	Other vehicle is traveling in the adjacent lane, behind and in the same direction as subject vehicle, and crosses subject vehicle's left lane line (i.e., other vehicle crosses its right lane line), resulting in contact or near-contact between the rear of subject vehicle and front of the other vehicle	Lane lines are from subject vehicle's point of view (left or right)
9	Precipitating Event	Other vehicle lane change - left, sideswipe threat	Other vehicle is traveling in the adjacent left lane, beside and in the same direction as subject vehicle, and crosses subject vehicle's left lane line (i.e., other vehicle crosses its right lane line), resulting in contact or near-contact between the left side of subject vehicle and the right side of the other vehicle	Lane lines are from subject vehicle's point of view (left or right)
9	Precipitating Event	Other vehicle lane change - right, sideswipe threat	Other vehicle is traveling in the adjacent right lane, beside and in the same direction as subject vehicle, and crosses subject vehicle's right lane line (i.e., other vehicle crosses its left lane line), resulting in contact or near-contact between the right side of subject vehicle and the left side of the other vehicle	Lane lines are from subject vehicle's point of view (left or right)

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Variable #	Variable Name	Categories	Category Definitions	Examples and Hints
9	Precipitating Event	Other vehicle lane change - left other	Other vehicle is traveling in an adjacent lane, in the same direction as subject vehicle, and crosses subject vehicle's left lane line in a manner not described in other categories	Lane lines are from subject vehicle's point of view (left or right)
9	Precipitating Event	Other vehicle lane change - right in front of subject	Other vehicle is traveling in the adjacent lane, ahead of and in the same direction as subject vehicle, and crosses subject vehicle's right lane line (i.e., other vehicle crosses its left lane line), resulting in contact or near-contact between the front of subject vehicle and rear of the other vehicle	Lane lines are from subject vehicle's point of view (left or right)
9	Precipitating Event	Other vehicle lane change - right behind subject	Other vehicle is traveling in the adjacent lane, behind and in the same direction as subject vehicle, and crosses subject vehicle's right lane line (i.e., other vehicle crosses its left lane line), resulting in contact or near-contact between the rear of subject vehicle and front of the other vehicle	Lane lines are from subject vehicle's point of view (left or right)
9	Precipitating Event	Other vehicle lane change - right other	Other vehicle is traveling in an adjacent lane, in the same direction as subject vehicle, and crosses subject vehicle's right lane line in a manner not described in other categories	
9	Precipitating Event	Other vehicle oncoming - over left line	Other vehicle crosses subject vehicle's left lane line while traveling in the opposite direction from subject vehicle	Lane lines are from subject vehicle's point of view (left or right)
9	Precipitating Event	Other vehicle oncoming - over right line	Other vehicle crosses subject vehicle's right lane line while traveling in the opposite direction from subject vehicle	Lane lines are from subject vehicle's point of view (left or right)
9	Precipitating Event	Other vehicle from parallel/diagonal parking lane	Other vehicle crosses subject vehicle's lane line while departing some type of parking lane	
9	Precipitating Event	Other vehicle entering intersection - turning same direction	Other vehicle is turning from another roadway onto subject vehicle's roadway and attempts to travel in the same direction as subject vehicle, crossing subject vehicle's lane line	

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Category Definitions and Hints

Variable #	Variable Name	Categories	Category Definitions	Examples and Hints
9	Precipitating Event	Other vehicle entering intersection - straight across path	Other vehicle is continuing straight through the intersection and attempts to cross over subject vehicle's roadway, crossing subject vehicle's lane line	
9	Precipitating Event	Other vehicle entering intersection - turning onto opposite direction	Other vehicle is entering an intersection from another roadway and is turning or attempting to turn onto subject vehicle's roadway in the opposite travel direction of subject vehicle, crossing subject vehicle's lane line	
9	Precipitating Event	Other vehicle entering intersection - left turn across path	Other vehicle is entering an intersection and is making a left turn across the path of the subject vehicle (could have originally been traveling in either the same direction (in an adjacent lane) or opposite direction (in an oncoming lane) as the subject vehicle)	
9	Precipitating Event	Other vehicle entering intersection - intended path unknown	Other vehicle enters an intersection, crossing subject vehicle's lane line, but the other vehicle's travel direction could not be determined	
9	Precipitating Event	Other vehicle from driveway - turning into same direction	Other vehicle is turning from a driveway (a roadway providing access from some property adjacent to the trafficway) onto subject vehicle's roadway and attempts to travel in the same direction as subject vehicle, crossing subject vehicle's lane line	
9	Precipitating Event	Other vehicle from driveway - straight across path	Other vehicle is entering subject vehicle's roadway from a driveway (a roadway providing access from some property adjacent to the trafficway) and is continuing straight across to another driveway or roadway, crossing subject vehicle's lane line	

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Variable #	Variable Name	Categories	Category Definitions	Examples and Hints
9	Precipitating Event	Other vehicle from driveway - turning into opposite direction	Other vehicle is entering subject vehicle's roadway from a driveway (a roadway providing access from some property adjacent to the trafficway) and is attempting to turn into the opposite travel direction of subject vehicle, crossing subject vehicle's lane line	
9	Precipitating Event	Other vehicle from driveway - intended path unknown	Other vehicle is entering subject vehicle's roadway from a driveway (a roadway providing access from some property adjacent to the trafficway) , crossing subject vehicle's lane line, but details about its intended path are unknown	
9	Precipitating Event	Other vehicle from entrance to limited access highway	Other vehicle is attempting to enter (merge) onto the limited access highway (via an entrance ramp) which is being traveled by subject vehicle, crossing subject vehicle's lane line	
9	Precipitating Event	Pedestrian in roadway	A pedestrian is present somewhere on the roadway (not necessarily walking)	Person can be sitting, standing, walking, running, etc.
9	Precipitating Event	Pedestrian approaching roadway	A pedestrian is within the trafficway and moving toward the roadway or attempting to enter the roadway, but is not on the roadway	
9	Precipitating Event	Pedestrian in unknown location	The presence or action of a pedestrian is a critical factor in the crash or near-crash, but the location and/or action of the pedestrian is unknown	
9	Precipitating Event	Pedalcyclist/other non-motorist in roadway	A pedalcyclist (person riding a pedal-powered conveyance such as a bicycle or tricycle) or other non-motorist (person riding on or in a conveyance not pedal-powered or motorized such as a baby carriage, skateboard, roller blades, etc.) is present somewhere on the roadway	Relative motion of the pedalcyclist or non-motorist is not a factor

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Variable #	Variable Name	Categories	Category Definitions	Examples and Hints
9	Precipitating Event	Pedalcyclist/other non-motorist approaching roadway	A pedalcyclist (person riding a pedal-powered conveyance such as a bicycle or tricycle) or other non-motorist (person riding on or in a conveyance not pedal-powered or motorized such as a baby carriage, skateboard, roller blades, etc.) is within the trafficway and moving toward the roadway or attempting to enter the roadway, but is not on the roadway	
9	Precipitating Event	Pedalcyclist/other non-motorist in unknown location	The presence or action of a pedalcyclist (person riding a pedal-powered conveyance such as a bicycle or tricycle) or other non-motorist (person riding on or in a conveyance not pedal-powered or motorized such as a baby carriage, skateboard, roller blades, etc.) is a critical factor in the crash or near-crash, but the location and/or action of the pedalcyclist/non-motorist is unknown	
9	Precipitating Event	Animal in roadway	A live animal (stationary or moving) is present somewhere on the roadway	
9	Precipitating Event	Animal approaching roadway	A live animal is within the trafficway and moving toward the roadway or attempting to enter the roadway, but is not on the roadway	
9	Precipitating Event	Animal in unknown location	The presence or action of a live animal is a critical factor in the crash or near-crash, but the location and/or action of the animal is unknown	
9	Precipitating Event	Object in roadway	An inanimate object (either fixed or nonfixed) is present somewhere on the roadway	Object can be a dead animal
9	Precipitating Event	Object approaching roadway	An inanimate object is within the trafficway and moving toward the roadway or attempting to enter the roadway, but is not on the roadway	Object can be a dead animal
9	Precipitating Event	Object in unknown location	The presence or movement of an inanimate object (with or without fixed or nonfixed) is a critical factor in the crash or near-crash, but the location and/or specific movement of the object is unknown	Object can be a dead animal

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Variable #	Variable Name	Categories	Category Definitions	Examples and Hints
9	Precipitating Event	No analyzed data	Complete analysis is not possible due to insufficient data	Ex. Part of video is missing or not viewable
10	Driver Reaction	No driver present	No driver was present in the vehicle at the time of the event	
10	Driver Reaction	No reaction	No change in driving behavior due to the precipitating event was evident	
10	Driver Reaction	Braking (no lockup)	Driver activated brake pedal with no resulting skidding	No lockup: by sight
10	Driver Reaction	Braking (lockup)	Driver activated brake pedal with resulting skidding	Lockup: by sight
10	Driver Reaction	Braking (lockup unknown)	Driver activated brake pedal, unknown whether skidding resulted	
10	Driver Reaction	Releasing brakes	Driver released brake pedal	
10	Driver Reaction	Steered to left	Driver steered to left of traveling direction	Generally, lateral acceleration greater than +/- 0.25 g would be noted
10	Driver Reaction	Steered to right	Driver steered to right of traveling direction	Generally, lateral acceleration greater than +/- 0.25 g would be noted
10	Driver Reaction	Braked and steered left	Driver activated brake pedal and steered to left of traveling direction	Generally, lateral/longitudinal acceleration greater than +/- 0.25 g (lateral) or + 0.25 (longitudinal) would be noted
10	Driver Reaction	Braked and steered right	Driver activated brake pedal and steered to right of traveling direction	Generally, lateral/longitudinal acceleration greater than +/- 0.25 g would be noted
10	Driver Reaction	Accelerated	Driver pressed on gas pedal to accelerate	Generally, longitudinal acceleration greater than + 0.25 g would be noted
10	Driver Reaction	Accelerated and steered left	Driver pressed on gas pedal to accelerate and steered to left of traveling direction	Generally, lateral/longitudinal acceleration greater than +/- 0.25 g (lateral) or + 0.25 (longitudinal) would be noted

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Variable #	Variable Name	Categories	Category Definitions	Examples and Hints
10	Driver Reaction	Accelerated and steered right	Driver pressed on gas pedal to accelerate and steered to right of traveling direction	Generally, lateral/longitudinal acceleration greater than +/- 0.25 g (lateral) or + 0.25 (longitudinal) would be noted
10	Driver Reaction	Other actions	Other corrective action not included in previous categories	
10	Driver Reaction	Unknown if action was attempted	Can't tell or make a judgment if driver attempted corrective action	
10	Driver Reaction	No analyzed data	Complete analysis is not possible due to insufficient data	Ex. Part of video is missing or not viewable
11	Post-Maneuver Control	Control maintained	Vehicle did not exhibit rotation, sliding, skidding, or any other loss of control as a result of the avoidance maneuver-vehicle continued along its intended path	Ex. vehicle stopped, turned, maintained constant speed, backed up
11	Post-Maneuver Control	Rotated clockwise	Vehicle remained horizontal, but spun about a vertical axis (yawed) in a clockwise direction with no other movement	
11	Post-Maneuver Control	Rotated counterclockwise	Vehicle remained horizontal, but spun about a vertical axis (yawed) in a counterclockwise direction with no other movement	
11	Post-Maneuver Control	Skidded longitudinally	Vehicle slid or skidded forward or backward (in travel direction) with no rotation	
11	Post-Maneuver Control	Skidded laterally	Vehicle slid or skidded to the left or right side (perpendicular to travel direction) with no rotation	
11	Post-Maneuver Control	Rotated unknown direction	Vehicle rotated about a vertical axis (yawed), could not tell whether direction was clockwise or counterclockwise	
11	Post-Maneuver Control	Combination of previous	Vehicle moved in any combination of the other factors (rotation, longitudinal sliding/skidding, and/or lateral sliding/skidding)	
11	Post-Maneuver Control	Unknown	Can't tell or make a judgment	

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Variable #	Variable Name	Categories	Category Definitions	Examples and Hints
11	Post-Maneuver Control	No analyzed data	Complete analysis is not possible due to insufficient data	Ex. Part of video is missing or not viewable
12, 13, 14	Driver Behavior 1, 2, 3	None	No apparent behavior(s) related to causing or avoiding the crash or near-crash	
12, 13, 14	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
12, 13, 14	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
12, 13, 14	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.
12, 13, 14	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
12, 13, 14	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)	
12, 13, 14	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
12, 13, 14	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
12, 13, 14	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

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Category Definitions and Hints

Variable #	Variable Name	Categories	Category Definitions	Examples and Hints
12, 13, 14	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	
12, 13, 14	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	
12, 13, 14	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
12, 13, 14	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	
12, 13, 14	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
12, 13, 14	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
12, 13, 14	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
12, 13, 14	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	
12, 13, 14	Driver Behavior 1, 2, 3	Following too closely	Vehicle is traveling at a unsafe distance (too close) behind the lead vehicle	

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Variable #	Variable Name	Categories	Category Definitions	Examples and Hints
12, 13, 14	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
12, 13, 14	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
12, 13, 14	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
12, 13, 14	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
12, 13, 14	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
12, 13, 14	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
12, 13, 14	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
12, 13, 14	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
12, 13, 14	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
12, 13, 14	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

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Variable #	Variable Name	Categories	Category Definitions	Examples and Hints
12, 13, 14	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
12, 13, 14	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
12, 13, 14	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
12, 13, 14	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)	
12, 13, 14	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)	
12, 13, 14	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	
12, 13, 14	Driver Behavior 1, 2, 3	Other sign violation	Driver disobeyed a traffic sign in a manner not described in previous categories	
12, 13, 14	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
12, 13, 14	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

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Variable #	Variable Name	Categories	Category Definitions	Examples and Hints
12, 13, 14	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
12, 13, 14	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	
12, 13, 14	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"
12, 13, 14	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).
12, 13, 14	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
12, 13, 14	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
12, 13, 14	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

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Variable #	Variable Name	Categories	Category Definitions	Examples and Hints
12, 13, 14	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	
12, 13, 14	Driver Behavior 1, 2, 3	Failure to dim headlights	Vehicle traveling with high beams activated on headlights, without dimming the lights when appropriate	
12, 13, 14	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	
12, 13, 14	Driver Behavior 1, 2, 3	Avoiding pedestrian	Driver behaved in a manner intended to avoid conflict with a pedestrian	
12, 13, 14	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)
12, 13, 14	Driver Behavior 1, 2, 3	Avoiding animal	Driver behaved in a manner intended to avoid conflict with an animal	
12, 13, 14	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.
12, 13, 14	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
12, 13, 14	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.
12, 13, 14	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	

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Variable #	Variable Name	Categories	Category Definitions	Examples and Hints
12, 13, 14	Driver Behavior 1, 2, 3	Other	Other behavior not described in previous categories	
15	Driver Impairments	None apparent	No observable driver impairment	
15	Driver Impairments	Drowsy, sleepy, asleep, fatigued	Driver exhibits obvious signs of being asleep or tired, or is actually asleep while driving, degrading performance of the driving task	Alcohol or other drugs may be the source of this impairment/Drowsy drivers: Behavior would be "inattentive or distracted," Distraction would be "not distracted" (unless there are other distractions)
15	Driver Impairments	Ill, blackout	Driver exhibits obvious signs of physical illness or loss of consciousness, degrading performance of the driving task	Alcohol or other drugs may be the source of this impairment
15	Driver Impairments	Angry	Driver exhibits obvious signs of anger, whether directed at a specific target or not, degrading performance of the driving task	
15	Driver Impairments	Other emotional state	Driver exhibits another emotional state not described in previous categories that degrades performance of the driving task	Ex. depressed, disturbed
15	Driver Impairments	Drugs, medication	Driver was obviously under the influence of a medication (prescription or over-the-counter) during the event (medication not necessarily a cause in the event)	Record if clearly seen
15	Driver Impairments	Drugs, Alcohol	Driver was obviously under the influence of alcohol during the event (alcohol not necessarily a cause in the event)	Record if clearly seen
15	Driver Impairments	Other illicit drugs	Driver was obviously under the influence of an illegal drug or other type of drug not described in other categories during the event (drug not necessarily a cause in the event)	Record if clearly seen/ex. marijuana, cocaine
15	Driver Impairments	Restricted to wheelchair	Driver must use a wheelchair for mobility	

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Variable #	Variable Name	Categories	Category Definitions	Examples and Hints
15	Driver Impairments	Impaired due to previous injury	Driver is physically impaired due to some type of pre-existing injury not described in previous categories	
15	Driver Impairments	Deaf	Driver is obviously hearing impaired	
15	Driver Impairments	Distracted	Driver appears to be partially or completely inattentive to the driving task	If there is any entry in the "Distraction" variable and the "Distraction Outcome" variable is anything except "No," then this variable is applicable.
15	Driver Impairments	Other	Driver exhibits obvious physical or mental impairment not described in previous categories (specifics are known)	
15	Driver Impairments	Unknown	Can't tell or make judgment	
15	Driver Impairments	No analyzed data	Complete analysis is not possible due to insufficient data	Ex. Part of video is missing or not viewable
16	Infrastructure	None	No infrastructure-related issues present	
16	Infrastructure	Roadway alignment	Maneuver is difficult for the driver due to the geometry of the roadway or intersection	Ex. narrow roadway, sharp turn, extremely short merge lane
16	Infrastructure	Roadway sight distance	The driver is unable to see an adequate distance ahead	
16	Infrastructure	Traffic control device	Lack of, poor positioning of, or poor visibility of traffic control devices	
16	Infrastructure	Roadway delineation	Poor visibility or positioning of roadway or lane borders	Ex. faded paint on lane lines
16	Infrastructure	Weather, visibility	Roadway is not designed to accommodate certain weather condition(s) and thus weather conditions influence driver capabilities	Ex. lane markings are difficult to distinguish on wet pavement.
16	Infrastructure	No analyzed data	Complete analysis is not possible due to insufficient data	Ex. Part of video is missing or not viewable
17, 18, 19	Distraction 1, 2, 3	Not Distracted	There are no observable signs of driver distraction	
17, 18, 19	Distraction 1, 2, 3	Lost in thought	Driver performs multiple non-specific eye glances within 6 second period of time	

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Variable #	Variable Name	Categories	Category Definitions	Examples and Hints
17, 18, 19	Distraction 1, 2, 3	Looked but did not see	Driver is looking right at where incident is occurring, but shows no reaction	
17, 18, 19	Distraction 1, 2, 3	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.
17, 18, 19	Distraction 1, 2, 3	Dancing	This could be when the driver is using his/her arms to go with the beat of the music or moving head.	
17, 18, 19	Distraction 1, 2, 3	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.	
17, 18, 19	Distraction 1, 2, 3	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	
17, 18, 19	Distraction 1, 2, 3	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).

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Variable #	Variable Name	Categories	Category Definitions	Examples and Hints
17, 18, 19	Distraction 1, 2, 3	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).
17, 18, 19	Distraction 1, 2, 3	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).
17, 18, 19	Distraction 1, 2, 3	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).
17, 18, 19	Distraction 1, 2, 3	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

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Category Definitions and Hints

Variable #	Variable Name	Categories	Category Definitions	Examples and Hints
17, 18, 19	Distraction 1, 2, 3	Insect in vehicle	Swatting at insect, moving body to avoid insect, looking around trying to locate insect.	
17, 18, 19	Distraction 1, 2, 3	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.
17, 18, 19	Distraction 1, 2, 3	Object dropped by driver	When a driver is holding something and it drops and the driver then picks it back up.	
17, 18, 19	Distraction 1, 2, 3	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).
17, 18, 19	Distraction 1, 2, 3	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	
17, 18, 19	Distraction 1, 2, 3	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
17, 18, 19	Distraction 1, 2, 3	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.	
17, 18, 19	Distraction 1, 2, 3	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.	

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Variable #	Variable Name	Categories	Category Definitions	Examples and Hints
17, 18, 19	Distraction 1, 2, 3	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).	
17, 18, 19	Distraction 1, 2, 3	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.)
17, 18, 19	Distraction 1, 2, 3	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.	
17, 18, 19	Distraction 1, 2, 3	Locating/reaching PDA	When driver reaches or starts to glance around for PDA.	
17, 18, 19	Distraction 1, 2, 3	Operating PDA	When driver is pressing buttons on the PDA.	
17, 18, 19	Distraction 1, 2, 3	Viewing PDA	When driver is looking at PDA, but not pressing any buttons	
17, 18, 19	Distraction 1, 2, 3	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.	
17, 18, 19	Distraction 1, 2, 3	Adjusting climate control	When driver interacts with climate control either by touching the climate control buttons, or glancing at the climate control on dashboard.	
17, 18, 19	Distraction 1, 2, 3	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.	
17, 18, 19	Distraction 1, 2, 3	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.	

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Variable #	Variable Name	Categories	Category Definitions	Examples and Hints
17, 18, 19	Distraction 1, 2, 3	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.	
17, 18, 19	Distraction 1, 2, 3	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.
17, 18, 19	Distraction 1, 2, 3	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)
17, 18, 19	Distraction 1, 2, 3	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).	
17, 18, 19	Distraction 1, 2, 3	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.	
17, 18, 19	Distraction 1, 2, 3	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).	
17, 18, 19	Distraction 1, 2, 3	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.	
17, 18, 19	Distraction 1, 2, 3	Other external distraction	When a driver is looking outside of the vehicle for purposes not described in previous categories	

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Variable #	Variable Name	Categories	Category Definitions	Examples and Hints
17, 18, 19	Distraction 1, 2, 3	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.	
17, 18, 19	Distraction 1, 2, 3	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.	
17, 18, 19	Distraction 1, 2, 3	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
17, 18, 19	Distraction 1, 2, 3	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
17, 18, 19	Distraction 1, 2, 3	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
17, 18, 19	Distraction 1, 2, 3	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
17, 18, 19	Distraction 1, 2, 3	Reaching for cigar/cigarette	When driver reaches or starts to glance around for cigar/cigarette.	
17, 18, 19	Distraction 1, 2, 3	Lighting cigar/cigarette	When driver is reaching for and/or lighting cigar/cigarette.	
17, 18, 19	Distraction 1, 2, 3	Smoking cigar/cigarette	When driver has a lit cigar/cigarette in their mouth or hand.	
17, 18, 19	Distraction 1, 2, 3	Extinguishing cigar/cigarette	When driver puts out his/her cigar/cigarette, or hands it to someone else.	
17, 18, 19	Distraction 1, 2, 3	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
17, 18, 19	Distraction 1, 2, 3	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
17, 18, 19	Distraction 1, 2, 3	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.

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Variable #	Variable Name	Categories	Category Definitions	Examples and Hints
17, 18, 19	Distraction 1, 2, 3	Brushing/flossing teeth	Using any appliance to brush, floss or otherwise clean teeth or mouth.	
17, 18, 19	Distraction 1, 2, 3	Biting nails/cuticles	When driver bite nails or cuticles	
17, 18, 19	Distraction 1, 2, 3	Removing/adjusting jewelry	When driver removes or adjusts jewelry, including watches.	
17, 18, 19	Distraction 1, 2, 3	Removing/inserting contact lenses	When driver is removing or inserting contact lens(es) from eye(s)	
17, 18, 19	Distraction 1, 2, 3	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
17, 18, 19	Distraction 1, 2, 3	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
17, 18, 19	Distraction 1, 2, 3	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
17, 18, 19	Distraction 1, 2, 3	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
17, 18, 19	Distraction 1, 2, 3	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

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Variable #	Variable Name	Categories	Category Definitions	Examples and Hints
17, 18, 19	Distraction 1, 2, 3	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
17, 18, 19	Distraction 1, 2, 3	No analyzed data	Complete analysis is not possible due to insufficient data	Ex. Part of video is missing or not viewable
20, 21, 22	Distraction 1, 2, 3 Start Sync	<i>see Distraction Start Sync column for each event</i>		
23, 24, 25	Distraction 1, 2, 3 End Sync	<i>see Distraction End Sync column for each event</i>		
26, 27, 28	Distraction 1, 2, 3 Outcome	Yes	The referenced distraction was a contributing factor to the occurrence of the precipitating event	
26, 27, 28	Distraction 1, 2, 3 Outcome	No	The referenced distraction obviously did not contribute in any way to the precipitating event	
26, 27, 28	Distraction 1, 2, 3 Outcome	Unable to determine	Difficult to make judgment whether the referenced distraction was definitely a contributing factor to the precipitating event (although all information is available). Most likely partially contributing to the occurrence of the event.	
26, 27, 28	Distraction 1, 2, 3 Outcome	No analyzed data	Complete analysis is not possible due to insufficient data	Ex. Part of video is missing or not viewable
29	Hands on the Wheel	None	Driver was not touching the steering wheel with either hand at the start of the precipitating factor	
29	Hands on the Wheel	Left hand only	Driver was touching the steering wheel with the left hand only at the start of the precipitating event	
29	Hands on the Wheel	Both hands	Driver was touching the steering wheel with both the right and left hands at the start of the precipitating event	
29	Hands on the Wheel	Right hand only	Driver was touching the steering wheel with the right hand only at the start of the precipitating event	

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Variable #	Variable Name	Categories	Category Definitions	Examples and Hints
29	Hands on the Wheel	Unknown	Can't tell or make a judgment	
29	Hands on the Wheel	No analyzed data	Complete analysis is not possible due to insufficient data	Ex. Part of video is missing or not viewable
30	Vehicle Contributing Factors	No vehicle factors	No vehicle defect or factor appeared to contribute to the occurrence of the precipitating event	
30	Vehicle Contributing Factors	Tires	An obvious defect or malfunction in the tires may have contributed to the occurrence of the precipitating event	If the factor involves a wheel (e.g. a lug nut came off), then code as Wheels
30	Vehicle Contributing Factors	Brake system	An obvious defect or malfunction in the braking system may have contributed to the occurrence of the precipitating event	Includes the parking brake
30	Vehicle Contributing Factors	Steering system	An obvious defect or malfunction in the steering system may have contributed to the occurrence of the precipitating event	
30	Vehicle Contributing Factors	Suspension	An obvious defect or malfunction in the suspension may have contributed to the occurrence of the precipitating event	
30	Vehicle Contributing Factors	Power train	An obvious defect or malfunction in the power train (engine and differential) may have contributed to the occurrence of the precipitating event	Includes universal joint, drive shaft, transmission, stuck throttle
30	Vehicle Contributing Factors	Exhaust system	An obvious defect or malfunction in the exhaust system may have contributed to the occurrence of the precipitating event	Includes exhaust manifold, header, muffler, catalytic converter, tailpipe
30	Vehicle Contributing Factors	Headlights	An obvious defect or malfunction in the headlights may have contributed to the occurrence of the precipitating event	
30	Vehicle Contributing Factors	Signal lights	An obvious defect or malfunction in the signal lights may have contributed to the occurrence of the precipitating event	

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Variable #	Variable Name	Categories	Category Definitions	Examples and Hints
30	Vehicle Contributing Factors	Other lights	An obvious defect or malfunction in vehicle lights not listed in previous categories may have contributed to the occurrence of the precipitating event	
30	Vehicle Contributing Factors	Wipers	An obvious defect or malfunction in the windshield wipers may have contributed to the occurrence of the precipitating event	Includes worn wipers, lack of washer fluid
30	Vehicle Contributing Factors	Wheels	An obvious defect or malfunction in the wheels may have contributed to the occurrence of the precipitating event	Includes loss of lug nuts
30	Vehicle Contributing Factors	Mirrors	An obvious defect or malfunction in the mirrors may have contributed to the occurrence of the precipitating event	Includes rear view and side view mirrors
30	Vehicle Contributing Factors	Driver seating and controls	An obvious defect or malfunction in the driver seating (including seating controls) may have contributed to the occurrence of the precipitating event	
30	Vehicle Contributing Factors	Body, doors	An obvious defect or malfunction in the body or doors may have contributed to the occurrence of the precipitating event	Includes trunk, hood, tailgate, rear doors of cargo vans
30	Vehicle Contributing Factors	Trailer hitch	An obvious defect or malfunction in the trailer hitch may have contributed to the occurrence of the precipitating event	Includes defective or improper trailer hitch
30	Vehicle Contributing Factors	Other	An obvious defect or malfunction of a vehicle factor not listed in previous categories may have contributed to the occurrence of the precipitating event (the factor is known)	
30	Vehicle Contributing Factors	Unknown	Can't tell or make a judgment	
30	Vehicle Contributing Factors	No analyzed data	Complete analysis is not possible due to insufficient data	Ex. Part of video is missing or not viewable

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Variable #	Variable Name	Categories	Category Definitions	Examples and Hints
31	Visual Obstructions	No obstruction	No visual obstructions for the driver were obvious	
31	Visual Obstructions	Rain, snow, fog, smoke, sand, dust	Surrounding atmosphere included rain, snow, fog, smoke, and/or dust, which decreased visibility	If it is not raining or snowing, but rain or snow is on the windshield obstructing the view, use the category "Broken or improperly cleaned windshield"/If window is foggy (no fog in the air), use category "Inadequate defrost or defog system" or "Broken or improperly cleaned windshield"
31	Visual Obstructions	Reflected glare	Glare reflected off of the vehicle or other exterior objects decreased visibility	
31	Visual Obstructions	Sunlight glare	Direct bright sunlight decreased visibility	
31	Visual Obstructions	Headlights	Headlights of other vehicle(s) decreased visibility	
31	Visual Obstructions	Curve or hill	The presence of a curve or hill in the field of view decreased visibility	
31	Visual Obstructions	Building, billboard, or other roadway infrastructure design features	The presence of a man-made structure in the field of view decreased visibility	includes sign, embankment, building
31	Visual Obstructions	Trees, crops, vegetation	The presence of trees, crops, or vegetation in the field of view decreased visibility	
31	Visual Obstructions	Moving vehicle (with or without load)	The presence of a vehicle in motion on the trafficway (with or without a load) in the field of view decreased visibility	
31	Visual Obstructions	Parked vehicle	The presence of a vehicle not in motion under its own accord in the field of view decreased visibility	Includes vehicles in-transport and not in-transport
31	Visual Obstructions	Splash or spray of passing vehicle	A splash or spray of water, snow, sand, etc. from a passing vehicle in the field of view decreased visibility	

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Variable #	Variable Name	Categories	Category Definitions	Examples and Hints
31	Visual Obstructions	Inadequate defrost or defog system	The presence of frost or fog on the windshield due to an inadequate defrost/defog system decreased visibility (defrost/defog system was in use)	If the defrost/defog system was not being used, use category "Broken or improperly cleaned windshield"
31	Visual Obstructions	Inadequate roadway lighting system	Inadequate lighting of the roadway (other than lighting provided by vehicles) decreased visibility	
31	Visual Obstructions	Inadequate vehicle headlamps	An inadequate exterior lighting system of the driver's vehicle (malfunctioning or turned off) decreased visibility	Includes headlights, fog lights, but not lighting systems of other vehicles
31	Visual Obstructions	Obstruction interior to vehicle	An interior vehicle feature (other than head restraints) decreased visibility	Includes interior mirrors
31	Visual Obstructions	Mirrors	Exterior mirrors on the vehicle in the field of view decreased visibility	
31	Visual Obstructions	Broken or improperly cleaned windshield	The windshield of the vehicle was broken or otherwise disfigured, or was at least partially covered by some material such as dirt, rain, or snow, which decreased visibility (no attempt to clean the windshield had been made)	Includes not utilizing the defrost/defog system or wipers
31	Visual Obstructions	Vision obscured - no details	The vision of the driver was obviously obscured, but the source of the impediment can not be determined	
31	Visual Obstructions	Other obstruction	A known impediment not listed in previous categories decreased visibility	
31	Visual Obstructions	No analyzed data	Complete analysis is not possible due to insufficient data	Ex. Part of video is missing or not viewable
32	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"
32	Surface Condition	Wet	Roadway is completely or partially wet in the area of the event (not snowy, icy, muddy, or oily)	
32	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
32	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
32	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
32	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.
32	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)
32	Surface Condition	No analyzed data	Complete analysis is not possible due to insufficient data	Ex. Part of video is missing or not viewable
33	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	
33	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	
33	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
33	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
33	Traffic Flow	No analyzed data	Complete analysis is not possible due to insufficient data	Ex. Part of video is missing or not viewable
34	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.	
34	Travel Lanes	2	Two lanes are available for travel at the time of the event	
34	Travel Lanes	3	Three lanes are available for travel at the time of the event	
34	Travel Lanes	4	Four lanes are available for travel at the time of the event	
34	Travel Lanes	5	Five lanes are available for travel at the time of the event	
34	Travel Lanes	6	Six lanes are available for travel at the time of the event	
34	Travel Lanes	7	Seven lanes are available for travel at the time of the event	
34	Travel Lanes	8+	Eight or more lanes are available for travel at the time of the event	
34	Travel Lanes	No analyzed data	Complete analysis is not possible due to insufficient data	Ex. Part of video is missing or not viewable
35	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
35	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.	
35	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.	
35	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.	

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Variable #	Variable Name	Categories	Category Definitions	Examples and Hints
35	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.	
35	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.	
35	Traffic Density	No analyzed data	Complete analysis is not possible due to insufficient data	Ex. Part of video is missing or not viewable
36	Traffic Control	No traffic control	There is no traffic control applicable to the subject vehicle at the time of the event	

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Variable #	Variable Name	Categories	Category Definitions	Examples and Hints
36	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
36	Traffic Control	Traffic signal	A traffic signal (by colors or flashing) is controlling some aspect of the traffic flow applicable to the subject vehicle	
36	Traffic Control	Stop sign	A stop sign is controlling some aspect of the traffic flow applicable to the subject vehicle	
36	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)	
36	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
36	Traffic Control	No passing signs	A sign indicating that the subject vehicle is in a no passing zone	
36	Traffic Control	Yield sign	A yield sign is controlling some aspect of the traffic flow applicable to the subject vehicle	
36	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	
36	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	
36	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	

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Variable #	Variable Name	Categories	Category Definitions	Examples and Hints
36	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	
36	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
36	Traffic Control	No analyzed data	Complete analysis is not possible due to insufficient data	Ex. Part of video is missing or not viewable
37	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
37	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
37	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
37	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	

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Variable #	Variable Name	Categories	Category Definitions	Examples and Hints
37	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
37	Relation to Junction	Rail grade crossing	Involved vehicles are close to the at-grade connection of a railroad bed and roadway	
37	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
37	Relation to Junction	Parking lot	Involved vehicles are within the boundaries of a parking lot	
37	Relation to Junction	Other	Involved vehicles are related to a junction in a manner not described in other categories	
37	Relation to Junction	No analyzed data	Complete analysis is not possible due to insufficient data	Ex. Part of video is missing or not viewable
38	Alignment	Straight level	Roadway alignment is straight, profile is flat (no hills or grade)	
38	Alignment	Curve level	Roadway alignment is curved, profile is flat (no hills or grade)	
38	Alignment	Straight grade	Roadway alignment is straight, profile is graded (vehicle is going up or down a grade)	
38	Alignment	Curve grade	Roadway alignment is curved, profile is graded (vehicle is going up or down a grade)	
38	Alignment	Straight hillcrest	Roadway alignment is straight, vehicle is at a hillcrest	
38	Alignment	Curve hillcrest	Roadway alignment is curved, vehicle is at a hillcrest	
38	Alignment	Straight dip	Roadway alignment is straight, vehicle is in a dip	
38	Alignment	Other	Roadway alignment and/or profile are known, but are not described in previous categories	
38	Alignment	No analyzed data	Complete analysis is not possible due to insufficient data	Ex. Part of video is missing or not viewable

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Variable #	Variable Name	Categories	Category Definitions	Examples and Hints
39	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
39	Locality	Church	Vehicle passes a church building at the time of the precipitating event	
39	Locality	Playground	Vehicle passes any type of playground or children's playing field at the time of the precipitating event	
39	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
39	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)	
39	Locality	Residential	Vehicle passes at least one house or evidence of a residential neighborhood at the time of the precipitating event	
39	Locality	Interstate	Vehicle is travelling on an interstate (no other category description is visible) at the time of the precipitating event	
39	Locality	Other	Locality is one not described in other categories	
39	Locality	Construction Zone	Vehicle is in a construction zone (construction equipment, barrel, etc. are visible) at the time of the precipitating event	
39	Locality	No analyzed data	Complete analysis is not possible due to insufficient data	Ex. Part of video is missing or not viewable
40	Lighting	Dawn	The time of day during the precipitating event is sunrise	
40	Lighting	Daylight	The time of day during the precipitating event is some point after dawn but before dusk	
40	Lighting	Dusk	The time of day during the precipitating event is sunset	
40	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

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Variable #	Variable Name	Categories	Category Definitions	Examples and Hints
40	Lighting	Darkness, not lighted	It is dark during the precipitating event, and the roadway is not lighted	
40	Lighting	No analyzed data	Complete analysis is not possible due to insufficient data	Ex. Part of video is missing or not viewable
41	Weather	Clear	There are no adverse atmospheric conditions at the time of the precipitating event (no conditions described in other categories)	
41	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
41	Weather	Fog	There is fog visible at the time of the precipitating event	
41	Weather	Mist	There is mist in the air at the time of the precipitating event	
41	Weather	Raining	It is raining at the time of the precipitating event	Check for wiper use
41	Weather	Snowing	It is snowing at the time of the precipitating event	
41	Weather	Sleeting	It is sleeting at the time of the precipitating event	
41	Weather	Smoke, dust	There is smoke and/or dust, either stagnant or blowing, in the air at the time of the precipitating event	
41	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
41	Weather	No analyzed data	Complete analysis is not possible due to insufficient data	Ex. Part of video is missing or not viewable
42	Driver Seatbelt Use	Lap/shoulder belt	The driver is restrained by a lap/shoulder belt combination at the time of the precipitating event	
42	Driver Seatbelt Use	Lap only	The driver is restrained by only a lap belt at the time of the precipitating event	
42	Driver Seatbelt Use	Shoulder only	The driver is restrained by only a shoulder belt at the time of the precipitating event	
42	Driver Seatbelt Use	None used	The driver is not using a lap or shoulder belt (or combination of the two)	
42	Driver Seatbelt Use	Unknown if used	Can't tell or make a judgment	

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Variable #	Variable Name	Categories	Category Definitions	Examples and Hints
42	Driver Seatbelt Use	No analyzed data	Complete analysis is not possible due to insufficient data	Ex. Part of video is missing or not viewable
43	Number of Other Vehicles	0	No other vehicles were involved in the crash or near-crash (only the subject vehicle)	Interaction with barriers: 0 other cars
43	Number of Other Vehicles	1	One other vehicle (in addition to the subject vehicle) was involved in the crash or near-crash	
43	Number of Other Vehicles	2	Two other vehicles (in addition to the subject vehicle) were involved in the crash or near-crash	
43	Number of Other Vehicles	3	Three other vehicles (in addition to the subject vehicle) were involved in the crash or near-crash	
43	Number of Other Vehicles	4	Four other vehicles (in addition to the subject vehicle) were involved in the crash or near-crash	
43	Number of Other Vehicles	5	Five other vehicles (in addition to the subject vehicle) were involved in the crash or near-crash	
43	Number of Other Vehicles	No analyzed data	Complete analysis is not possible due to insufficient data	Ex. Part of video is missing or not viewable
44	Fault	Subject Driver	The driver of the subject vehicle obviously committed the error that led to the crash or near-crash	
44	Fault	Driver 2	The driver of the vehicle 2 (or pedestrian) obviously committed the error that led to the crash or near-crash	
44	Fault	Driver 3	The driver of the vehicle 3 obviously committed the error that led to the crash or near-crash	
44	Fault	Unknown	Can't tell or make a judgment/can't determine whether one driver was completely at fault	Code as unknown if the other vehicle is object or animal

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Variable #	Variable Name	Categories	Category Definitions	Examples and Hints
44	Fault	No analyzed data	Complete analysis is not possible due to insufficient data	Ex. Part of video is missing or not viewable
45, 46	Vehicle 2, 3 Location	A = In front of subject vehicle	Other vehicle, pedestrian, or object is in front of the subject vehicle, in the path of travel	See Figure 4 in Researcher Dictionary for Video Reduction Data
45, 46	Vehicle 2, 3 Location	B = In front and to the immediate right of the subject vehicle	Other vehicle, pedestrian, or object is in front of the subject vehicle, but to the right of the path of travel (closer to the passenger side of the vehicle)	See Figure 4 in Researcher Dictionary for Video Reduction Data
45, 46	Vehicle 2, 3 Location	C = On the right side of the subject vehicle, closer to front seat of the vehicle.	Other vehicle, pedestrian, or object is on the right (passenger) side of the subject vehicle, closer to the front than the back of the car	See Figure 4 in Researcher Dictionary for Video Reduction Data
45, 46	Vehicle 2, 3 Location	D = On the right side of the subject vehicle, closer to rear seat of the vehicle.	Other vehicle, pedestrian, or object is on the right (passenger) side of the subject vehicle, closer to the back than the front of the car	See Figure 4 in Researcher Dictionary for Video Reduction Data
45, 46	Vehicle 2, 3 Location	E = Behind and to the immediate right of the subject vehicle.	Other vehicle, pedestrian, or object is behind the subject vehicle, but to the right of the path of travel (closer to the passenger side of the vehicle)	See Figure 4 in Researcher Dictionary for Video Reduction Data
45, 46	Vehicle 2, 3 Location	F = Behind the subject vehicle	Other vehicle, pedestrian, or object is behind the subject vehicle, in the path of travel	See Figure 4 in Researcher Dictionary for Video Reduction Data
45, 46	Vehicle 2, 3 Location	G = Behind and to the immediate left of the subject vehicle.	Other vehicle, pedestrian, or object is behind the subject vehicle, but to the left of the path of travel	See Figure 4 in Researcher Dictionary for Video Reduction Data
45, 46	Vehicle 2, 3 Location	H = On the left side of the subject vehicle, closer to the rear seat of the vehicle.	Other vehicle, pedestrian, or object is on the left (driver) side of the subject vehicle, closer to the back than the front of the car	See Figure 4 in Researcher Dictionary for Video Reduction Data

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Variable #	Variable Name	Categories	Category Definitions	Examples and Hints
45, 46	Vehicle 2, 3 Location	I = On the left side of the subject vehicle, closer to the front seat of the vehicle.	Other vehicle, pedestrian, or object is on the left (driver) side of the subject vehicle, closer to the front than the back of the car	See Figure 4 in Researcher Dictionary for Video Reduction Data
45, 46	Vehicle 2, 3 Location	J = In front and to the immediate left of the subject vehicle	Other vehicle, pedestrian, or object is in the front of the subject vehicle, but to the left of the path of travel (closer to the driver side of the vehicle)	See Figure 4 in Researcher Dictionary for Video Reduction Data
45, 46	Vehicle 2, 3 Location	No analyzed data	Complete analysis is not possible due to insufficient data	Ex. Part of video is missing or not viewable
47, 48	Vehicle 2, 3 Type	Automobile	Light vehicle designed primarily to transport passengers (includes automobile derivatives such as auto-based pickups)	Ex. convertible; 2-door sedan, hardtop, coupe; 2 to 5-door hatchback; 3-door coupe; 4-door sedan; station wagon (excluding van- and truck-based); cargo station wagon, El Camino, auto-based ambulance/hearse; large limousine; 3-wheeled automobile
47, 48	Vehicle 2, 3 Type	Sport Utility Vehicles	Utility vehicles designed to have off-road capabilities, less than or equal to 4,536 gross vehicle weight rating	Ex. multi-purpose vehicles; compact utility vehicles; large utility vehicles; utility station wagons
47, 48	Vehicle 2, 3 Type	Van (minivan or standard van)	Vehicles designed to maximize cargo/passenger area versus overall length, they have an enclosed cargo/passenger area and relatively short (or non-existent) hood, less than or equal to 4,536 gross vehicle weight rating	Ex. minivan; large van; step van or walk-in van; van based motorhome; van based school bus; other van derivatives
47, 48	Vehicle 2, 3 Type	Pickup truck	Light conventional trucks, pickup style small cab, large hood covering conventional engine placement, separate open box area for cargo, less than or equal to 4,536 gross vehicle weight rating	Ex. compact pickup; large pickup; pickup with slide-in camper; convertible pickup; other light pickup based trucks (commercial or recreational body, rather than a pickup box, has been attached to a pickup frame)

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Variable #	Variable Name	Categories	Category Definitions	Examples and Hints
47, 48	Vehicle 2, 3 Type	School bus	Medium/heavy vehicle (not including van-based) designed to carry groups of passengers to and from educational facilities and/or related functions, characteristically painted yellow and clearly identified as school buses, gross vehicle weight rating more than 4,536 kg	Includes private company school bus, school bus converted for other uses (e.g., church bus)
47, 48	Vehicle 2, 3 Type	Transit bus	Medium/heavy motor vehicle (not including van-based) designed to transport large groups of passengers for fairly long periods of time (generally not cross-country), gross vehicle weight rating more than 4,536 kg	Includes transit, intercity, bus-based motorhome
47, 48	Vehicle 2, 3 Type	Greyhound bus	Commercial medium/heavy motor vehicle (not including van-based) designed to transport large groups of passengers for longer periods of time (generally cross-country), gross vehicle weight rating more than 4,536 kg	
47, 48	Vehicle 2, 3 Type	Conversion bus	Privately-owned medium/heavy motor vehicle (not including van-based) designed to transport large groups of passengers for fairly long periods of time, gross vehicle weight rating more than 4,536 kg	
47, 48	Vehicle 2, 3 Type	Single-unit straight truck: Multistop/Step Van	A non-articulated truck designed to carry cargo, gross vehicle weight rating more than 4,536 kg, has an integral driver's compartment and cargo area, generally equipped with a folding driver seat mounted on a pedestal and a sliding door for ease of ingress/egress	Ex. delivery trucks
47, 48	Vehicle 2, 3 Type	Single-unit straight truck: Box	A non-articulated truck designed to carry cargo, gross vehicle weight rating more than 4,536 kg, with an enclosed box attachment	
47, 48	Vehicle 2, 3 Type	Single-unit straight truck: Dump	A non-articulated truck designed to carry cargo, gross vehicle weight rating more than 4,536 kg, with a dumping mechanism	

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Variable #	Variable Name	Categories	Category Definitions	Examples and Hints
47, 48	Vehicle 2, 3 Type	Single-unit straight truck: Garbage/Recycling	A non-articulated truck designed to carry cargo, gross vehicle weight rating more than 4,536 kg, used for garbage pick-up and recycling	
47, 48	Vehicle 2, 3 Type	Single-unit straight truck: Concrete Mixer	A non-articulated truck designed to carry cargo, gross vehicle weight rating more than 4,536 kg, used as a concrete mixer	
47, 48	Vehicle 2, 3 Type	Single-unit straight truck: Beverage	A non-articulated truck designed to carry cargo, gross vehicle weight rating more than 4,536 kg, used to deliver beverages	
47, 48	Vehicle 2, 3 Type	Single-unit straight truck: Flatbed	A non-articulated truck designed to carry cargo, gross vehicle weight rating more than 4,536 kg, with a flatbed attached	
47, 48	Vehicle 2, 3 Type	Single-unit straight truck: Tow truck	A non-articulated truck designed to carry cargo, gross vehicle weight rating more than 4,536 kg, used for towing functions	
47, 48	Vehicle 2, 3 Type	Single-unit straight truck: Other	A non-articulated truck designed to carry cargo, gross vehicle weight rating more than 4,536 kg, of a type not included in the categories listed above	Ex. heavy pickups such as F-450, F-550
47, 48	Vehicle 2, 3 Type	Single-unit straight truck: Unknown	A non-articulated truck designed to carry cargo, gross vehicle weight rating more than 4,536 kg, unknown specific type	
47, 48	Vehicle 2, 3 Type	Straight Truck + Trailer	A non-articulated truck designed to carry cargo, gross vehicle weight rating more than 4,536 kg, with a trailing unit	
47, 48	Vehicle 2, 3 Type	Tractor only	A fifth wheel equipped tractor-trailer power unit, gross vehicle weight rating more than 4,536 kg, without a trailer	
47, 48	Vehicle 2, 3 Type	Tractor-trailer: Enclosed box	A fifth wheel equipped tractor-trailer power unit, gross vehicle weight rating more than 4,536 kg, with trailer of the enclosed box design	
47, 48	Vehicle 2, 3 Type	Tractor-trailer: Flatbed	A fifth wheel equipped tractor-trailer power unit, gross vehicle weight rating more than 4,536 kg, with trailer of the flatbed design	

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Variable #	Variable Name	Categories	Category Definitions	Examples and Hints
47, 48	Vehicle 2, 3 Type	Tractor-trailer: Tank	A fifth wheel equipped tractor-trailer power unit, gross vehicle weight rating more than 4,536 kg, with trailer of the tank design	
47, 48	Vehicle 2, 3 Type	Tractor-trailer: Car carrier	A fifth wheel equipped tractor-trailer power unit, gross vehicle weight rating more than 4,536 kg, with trailer of the car carrier design	
47, 48	Vehicle 2, 3 Type	Tractor-trailer: Livestock	A fifth wheel equipped tractor-trailer power unit, gross vehicle weight rating more than 4,536 kg, with trailer of the livestock carrier design	
47, 48	Vehicle 2, 3 Type	Tractor-trailer: Lowboy trailer	A fifth wheel equipped tractor-trailer power unit, gross vehicle weight rating more than 4,536 kg, with lowboy trailer	
47, 48	Vehicle 2, 3 Type	Tractor-trailer: Dump trailer	A fifth wheel equipped tractor-trailer power unit, gross vehicle weight rating more than 4,536 kg, with dump trailer	
47, 48	Vehicle 2, 3 Type	Tractor-trailer: Multiple box	A fifth wheel equipped tractor-trailer power unit, gross vehicle weight rating more than 4,536 kg, with more than one trailer of the enclosed box design	
47, 48	Vehicle 2, 3 Type	Tractor-trailer: Multiple grain	A fifth wheel equipped tractor-trailer power unit, gross vehicle weight rating more than 4,536 kg, with more than one trailer of the grain transport design	
47, 48	Vehicle 2, 3 Type	Tractor-trailer: Other	A fifth wheel equipped tractor-trailer power unit, gross vehicle weight rating more than 4,536 kg, with trailer(s), of a design not described in previous categories	
47, 48	Vehicle 2, 3 Type	Other Large Construction Equipment	Construction equipment other than trucks propelled by an internal combustion engine	Includes bulldozers, steamrollers, forklifts, roadgrader

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Variable #	Variable Name	Categories	Category Definitions	Examples and Hints
47, 48	Vehicle 2, 3 Type	Motorcycle or moped	Motorcycle is a two-wheeled open vehicle (no enclosed body) propelled by an internal combustion engine (includes motorcycles equipped with side car), moped is a motorized bicycle capable of moving either by pedaling or by an internal combustion engine, can also be a three-wheeled motorcycle or moped, or other motored cycle (such as a minibike or motor scooter)	Does not include all-terrain vehicles/cycles
47, 48	Vehicle 2, 3 Type	Ambulance	Any vehicle readily identified through lights or markings that is used solely to provide ambulance service or hearse/ambulance services	
47, 48	Vehicle 2, 3 Type	Fire truck	Any vehicle (including fire truck or car) readily identified through lights or markings that is owned by any local government or cooperative agency and used for the purpose of fire protection	Privately-owned vehicles used for fire protection are not included in this category
47, 48	Vehicle 2, 3 Type	Police	Any vehicle readily identified through lights or markings that is owned by any local, county, state, or federal police agency and is used for police services	Non-marked police vehicles (e.g., undercover vehicles) are not included in this category
47, 48	Vehicle 2, 3 Type	Other vehicle type	Vehicles not included in the categories listed in previous categories	Includes all-terrain vehicles, snowmobiles, farm equipment (other than trucks), construction equipment (other than trucks)
47, 48	Vehicle 2, 3 Type	Pedestrian	Any person who is on a trafficway or on a sidewalk or path contiguous with a trafficway, and who is not in or on a non-motorist conveyance, including persons who are in contact with the ground, roadway, etc., but who are holding onto a vehicle	
47, 48	Vehicle 2, 3 Type	Cyclist	A person on any type of self-propelled pedaled cycle, either driver or passenger, including bicycles, tricycles, and unicycles (includes pedalcyclists who hold onto a motor vehicle in motion)	
47, 48	Vehicle 2, 3 Type	Animal	Any type of live animal	

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Variable #	Variable Name	Categories	Category Definitions	Examples and Hints
47, 48	Vehicle 2, 3 Type	Object	Any inanimate object (other than a vehicle)	Includes dead animal
47, 48	Vehicle 2, 3 Type	Unknown vehicle type	Can't tell or make a judgment about the type of vehicle	
47, 48	Vehicle 2, 3 Type	No analyzed data	Complete analysis is not possible due to insufficient data	Ex. Part of video is missing or not viewable
49, 50	Vehicle 2, 3 Maneuver	Going straight, constant speed	Traveling straight at a longitudinal acceleration (generally) less than + 0.25 g	
49, 50	Vehicle 2, 3 Maneuver	Going straight ahead, accelerating	Traveling straight at a longitudinal acceleration (generally) greater than + 0.25 g	
49, 50	Vehicle 2, 3 Maneuver	Going straight, but with unintentional "drifting" within lane or across lanes	Traveling generally straight, but with occasional variance within travel lane or into adjacent lane	
49, 50	Vehicle 2, 3 Maneuver	Decelerating in traffic lane	Traveling in lane at a longitudinal acceleration (generally) less than - 0.25 g	
49, 50	Vehicle 2, 3 Maneuver	Starting in traffic lane	In the process of accelerating from a stopped position in the travel lane (car was idling)	
49, 50	Vehicle 2, 3 Maneuver	Stopped in traffic lane	Stopped in travel lane, speed indicator reading 0 mph (not parked or disabled, but car is idling)	
49, 50	Vehicle 2, 3 Maneuver	Passing or overtaking another vehicle	In the process of moving ahead of another vehicle on a two-lane undivided roadway	
49, 50	Vehicle 2, 3 Maneuver	Disabled or parked in travel lane	Stopped in travel lane, speed indicator reading 0 mph (due to being parked or disabled, car not idling)	
49, 50	Vehicle 2, 3 Maneuver	Leaving a parked position	In the process of moving out of a parked position (car was stopped and turned off)	
49, 50	Vehicle 2, 3 Maneuver	Entering a parked position	In the process of moving into a parked position (intending for car to be stopped and turned off)	
49, 50	Vehicle 2, 3 Maneuver	Turning right	Making a turn to the right, intending to travel in that direction	
49, 50	Vehicle 2, 3 Maneuver	Turning left	Making a turn to the left, intending to travel in that direction	

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Variable #	Variable Name	Categories	Category Definitions	Examples and Hints
49, 50	Vehicle 2, 3 Maneuver	Making U-turn	Making a turn in the roadway, intending to travel in the opposite direction	
49, 50	Vehicle 2, 3 Maneuver	Backing up (other than for parking purposes)	Traveling with the vehicle in reverse for a purpose other than parking	
49, 50	Vehicle 2, 3 Maneuver	Negotiating a curve	In the process of traveling on a roadway that has (at that point) some curvature	
49, 50	Vehicle 2, 3 Maneuver	Changing lanes	In the process of changing from one travel lane to the adjacent one	
49, 50	Vehicle 2, 3 Maneuver	Merging	In the process of changing from one travel lane to another, when the lanes are becoming one	
49, 50	Vehicle 2, 3 Maneuver	Maneuvering to avoid an animal	An action whose purpose is solely to avoid contact with a living animal	
49, 50	Vehicle 2, 3 Maneuver	Maneuvering to avoid a pedestrian/pedalcyclist	An action whose purpose is solely to avoid contact with a pedestrian or pedalcyclist. A pedestrian is any person who is on a trafficway or on a sidewalk or path contiguous with a trafficway, and who is not in or on a non-motorist conveyance - this includes persons who are in contact with the ground, roadway, etc., but who are holding onto a vehicle. A pedalcyclist is a person on any type of self-propelled pedaled cycle, either driver or passenger, including bicycles, tricycles, and unicycles (includes pedalcyclists who hold onto a motor vehicle in motion).	
49, 50	Vehicle 2, 3 Maneuver	Maneuvering to avoid an object	An action whose purpose is solely to avoid contact with any type of inanimate obstacle or object (other than another vehicle)	
49, 50	Vehicle 2, 3 Maneuver	Maneuvering to avoid a vehicle	An action whose purpose is solely to avoid contact with another vehicle	
49, 50	Vehicle 2, 3 Maneuver	Other	Other action not included in previous categories	Code as "other" if the other vehicle is pedestrian, animal, or object
49, 50	Vehicle 2, 3 Maneuver	Unknown	Can't tell or make a judgment	

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Category Definitions and Hints

Variable #	Variable Name	Categories	Category Definitions	Examples and Hints
49, 50	Vehicle 2, 3 Maneuver	No analyzed data	Complete analysis is not possible due to insufficient data	Ex. Part of video is missing or not viewable
51, 52	Vehicle 2, 3 Driver Reaction	No driver present	No driver was present in the vehicle at the time of the event	
51, 52	Vehicle 2, 3 Driver Reaction	No reaction	No change in driving behavior due to the precipitating event was evident	
51, 52	Vehicle 2, 3 Driver Reaction	Braking (no lockup)	Driver activated brake pedal with no resulting skidding	No lockup: by sight
51, 52	Vehicle 2, 3 Driver Reaction	Braking (lockup)	Driver activated brake pedal with resulting skidding	Lockup: by sight
51, 52	Vehicle 2, 3 Driver Reaction	Braking (lockup unknown)	Driver activated brake pedal, unknown whether skidding resulted	
51, 52	Vehicle 2, 3 Driver Reaction	Releasing brakes	Driver released brake pedal	
51, 52	Vehicle 2, 3 Driver Reaction	Steered to left	Driver steered to left of traveling direction	Generally, lateral acceleration greater than +/- 0.25 g would be noted
51, 52	Vehicle 2, 3 Driver Reaction	Steered to right	Driver steered to right of traveling direction	Generally, lateral acceleration greater than +/- 0.25 g would be noted
51, 52	Vehicle 2, 3 Driver Reaction	Braked and steered to left	Driver activated brake pedal and steered to left of traveling direction	Generally, lateral/longitudinal acceleration greater than +/- 0.25 g (lateral) or + 0.25 (longitudinal) would be noted
51, 52	Vehicle 2, 3 Driver Reaction	Braked and steered to right	Driver activated brake pedal and steered to right of traveling direction	Generally, lateral/longitudinal acceleration greater than +/- 0.25 g would be noted

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Category Definitions and Hints

Variable #	Variable Name	Categories	Category Definitions	Examples and Hints
51, 52	Vehicle 2, 3 Driver Reaction	Accelerated	Driver pressed on gas pedal to accelerate	Generally, longitudinal acceleration greater than + 0.25 g would be noted
51, 52	Vehicle 2, 3 Driver Reaction	Accelerated and steered to left	Driver pressed on gas pedal to accelerate and steered to left of traveling direction	Generally, lateral/longitudinal acceleration greater than +/- 0.25 g (lateral) or + 0.25 (longitudinal) would be noted
51, 52	Vehicle 2, 3 Driver Reaction	Accelerated and steered to right	Driver pressed on gas pedal to accelerate and steered to right of traveling direction	Generally, lateral/longitudinal acceleration greater than +/- 0.25 g (lateral) or + 0.25 (longitudinal) would be noted
51, 52	Vehicle 2, 3 Driver Reaction	Other actions	Other corrective action not included in previous categories	Code as "other actions" if the other vehicle is pedestrian, animal, or object
51, 52	Vehicle 2, 3 Driver Reaction	Unknown if action was attempted	Can't tell or make a judgment if driver attempted corrective action	
51, 52	Vehicle 2, 3 Driver Reaction	No analyzed data	Complete analysis is not possible due to insufficient data	Ex. Part of video is missing or not viewable
53	Final Narrative	n/a		

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Distraction Start and Stop Points

Variable #	Variable Name	Categories	Event Start Point	Event Stop Point
17, 18, 19	Distraction 1, 2, 3	Not Distracted		
17, 18, 19	Distraction 1, 2, 3	Lost in thought	When incident first presents itself (i.e., vehicle ahead of driver applies brakes)	When driver first responds to incident (i.e., facial expression changes, applies brakes, moves steering wheel in an evasive maneuver).
17, 18, 19	Distraction 1, 2, 3	Looked but did not see	When glare (bright reflection) is first shown on driver's face.	When driver first responds to incident (i.e., facial expression changes, applies brakes, moves steering wheel in an evasive maneuver).
17, 18, 19	Distraction 1, 2, 3	Talking/singing	When driver first starts to open mouth, forming first word.	When driver stops moving mouth for last time. This does not include driver screaming or cursing in reaction to an incident.
17, 18, 19	Distraction 1, 2, 3	Dancing	When body part first starts moving in a rhythmic motion.	When body stops moving in a rhythmic motion for the last time.
17, 18, 19	Distraction 1, 2, 3	Reading	When eyes first glance at what the driver is reading.	When eyes have fixated on the reading material for the last time and then fixate somewhere else.
17, 18, 19	Distraction 1, 2, 3	Cognitive - Other	When eyes first glance at what the driver is writing on, angry at, etc.	When eyes have fixated on the writing task or person for the last time and then fixate somewhere else.
17, 18, 19	Distraction 1, 2, 3	Passenger in adjacent seat	The first frame number when driver interacts with a passenger in the adjacent seat. This could be talking, 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) or glancing at the passenger or something the passenger is showing him/her. If the driver exits the car and re-enters, event start would begin when the driver enters the vehicle again with the passenger also in the vehicle.	Given that we can't see/hear the passenger, this will be the last frame number of crash/near-crash epoch.

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Distraction Start and Stop Points

Variable #	Variable Name	Categories	Event Start Point	Event Stop Point
17, 18, 19	Distraction 1, 2, 3	Passenger in rear seat	The first frame number when driver interacts with a passenger in the rear seat. This could be talking, 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) or glancing at the passenger or something the passenger is showing him/her. If the driver exits the car and re-enters, event start would begin when the driver enters the vehicle again with the passenger also in the vehicle.	Given that we can't see/hear the passenger, this will be the last frame number of crash/near-crash epoch.
17, 18, 19	Distraction 1, 2, 3	Child in adjacent seat	The first frame number when driver interacts with a child in the adjacent seat. This could be talking, reacting to (i.e., laughing), moving toward or away from the passenger (i.e., reaching for a child, not object, or avoiding a pat from the person) or glancing at the passenger or something the passenger is showing them. If the driver exits the car and re-enters, event start would begin when the driver enters the vehicle again with the passenger also in the vehicle.	Given that we can't see/hear the passenger, this will be the last frame number of crash/near-crash epoch.
17, 18, 19	Distraction 1, 2, 3	Child in rear seat	The first frame number when driver interacts with a child in the back seat. This could be talking, reacting to (i.e., laughing), moving toward or away from the passenger (i.e., reaching for a child, not object, or avoiding a pat from the person) or glancing at the passenger or something the passenger is showing them. If the driver exits the car and re-enters, event start would begin when the driver enters the vehicle again with the passenger also in the vehicle.	Given that we can't see/hear the passenger, this will be the last frame number of crash/near-crash epoch.
17, 18, 19	Distraction 1, 2, 3	Moving object in vehicle	Object is first set in motion	Object is first at rest

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Distraction Start and Stop Points

Variable #	Variable Name	Categories	Event Start Point	Event Stop Point
17, 18, 19	Distraction 1, 2, 3	Insect in vehicle	When driver first responds to insect (i.e., looks away from driving scene)	When driver goes back to normal driving behavior (i.e., looking at driving scene) and stops interacting with the insect.
17, 18, 19	Distraction 1, 2, 3	Pet in vehicle	When driver first interacts with pet. This could be first glance away from driving scene when looking for or at pet. Or if driver first speaks and then looks at pet, then the beginning frame number would be when first word is formed.	When driver stops interacting with pet. This would be when driver has last glance at pet, takes hand off of pet if not looking at pet, or stops talking to pet.
17, 18, 19	Distraction 1, 2, 3	Object dropped by driver	When the driver last touches the object before it drops.	When the driver first touches the object and/or it is first lifted up.
17, 18, 19	Distraction 1, 2, 3	Reaching for object (not cell phone)	When driver first starts to move hand to reach for object	When driver first touches the object.
17, 18, 19	Distraction 1, 2, 3	Animal/Object in Vehicle-- Other	When driver first looks at, reaches for, OR handles the object (whichever occurs first)	When driver places object and it is no longer in his/her hands, OR is no longer looking at object (whichever occurs last)
17, 18, 19	Distraction 1, 2, 3	Talking/listening on cell phone	Begins when the phone is at the driver's ear. If using an earpiece, it begins when the driver has pushed the last button on his/her phone.	Ends when the driver moves the phone away from his/her ear and has let go of the phone, or once the phone is away from the driver's ear, when the phone is no longer moving (i.e., driver puts the phone down in their lap, but doesn't let go of the phone). Once they put the phone in their lap and still hold it, this should be recorded as "other." If they are using an earpiece, it is when they push a button on their phone to end the call.
17, 18, 19	Distraction 1, 2, 3	Dialing hand-held cell phone	For flip phones it begins when phone is fully opened. For non-flip phones it begins when first button on keypad is depressed or glance at cell phone begins just prior to pushing a button, which ever comes first. If driver reads phone number from a piece of paper, the first frame number would be when they pick up the piece of paper and glance at it.	Ends when last button is depressed and hand stops moving when the phone is up to the driver's ear. Or if not completing a call, it would be when he/she close the phone and/or let it go or put it in his/her lap, or last glances at it

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Distraction Start and Stop Points

Variable #	Variable Name	Categories	Event Start Point	Event Stop Point
17, 18, 19	Distraction 1, 2, 3	Dialing hand-held cell phone using quick keys	For flip phones it begins when phone is fully opened. For non-flip phones it begins when first button on keypad is depressed or glance at cell phone begins just prior to pushing a button, whichever comes first. If driver reads phone number from a piece of paper, the first frame number would be when they pick up the piece of paper and glance at it.	Ends when last button is depressed and hand stops moving when the phone is up to the driver's ear. Or if not completing a call, it would be when he/she closes the phone and/or let it go or put it in his/her lap, or last glances at it
17, 18, 19	Distraction 1, 2, 3	Dialing hands-free cell phone using voice activated software	Begins when driver begins to speak toward open cell phone or in ear piece.	Ends when the driver continually speaks, as if in conversation or presses button on cell phone (hangs up).
17, 18, 19	Distraction 1, 2, 3	Locating/reaching/answering cell phone	Begins when the driver starts to move his/her hand in the direction of the phone to retrieve the phone.	Ends when he or she does one of the following (or whichever comes last): (1) For answering the cell phone, the last frame is when the driver finishes moving the phone to his/her ear. (2) For locating and reaching the cell phone, finishes when one of the other categories begins (i.e., dialing, talking/listening). So for dialing it would be when the phone is first flipped open or for non-flip phones when the driver glances at the phone quickly followed by a button press or the first button is depressed. And lastly it could be when hand becomes stationary again (i.e., picked up cell phone, but then rests the cell phone in lap or just holding phone in hand). (3) For locating cell phone and not picking it up, the last frame number would be the first frame number once the subject has shifted his/her gaze to something else (i.e. forward roadway) having glanced at the cell phone for the last time.
17, 18, 19	Distraction 1, 2, 3	Cell phone - Other	When interaction begins (specifics depend upon particular type of interaction)	When interaction ends (specifics depend upon particular type of interaction)

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Distraction Start and Stop Points

Variable #	Variable Name	Categories	Event Start Point	Event Stop Point
17, 18, 19	Distraction 1, 2, 3	Locating/reaching PDA	When driver first starts to move hand to reach for PDA or glances in that direction followed by hand moving for PDA	When driver first touches the PDA. If driver doesn't touch PDA, then it is when driver stops looking at PDA.
17, 18, 19	Distraction 1, 2, 3	Operating PDA	When driver first presses a button on the PDA	The last button press on the PDA
17, 18, 19	Distraction 1, 2, 3	Viewing PDA	When driver first looks in the direction of the PDA location.	When driver looks away from the PDA and fixates on another location.
17, 18, 19	Distraction 1, 2, 3	PDA - Other	When driver first looks at screen and is not pressing any buttons on PDA	When driver looks away from PDA and fixates somewhere else.
17, 18, 19	Distraction 1, 2, 3	Adjusting climate control	When driver's hand moves in the direction of the control or driver first glances at climate control.	When driver's hand has last interaction adjusting knobs or any controls for that device or driver glances at device for the last time.
17, 18, 19	Distraction 1, 2, 3	Adjusting radio	When driver's hand moves in the direction of the control or driver first glances at the radio.	When driver's hand has last interaction adjusting knobs or any controls for that device or driver glances at device for the last time.
17, 18, 19	Distraction 1, 2, 3	Inserting/retrieving cassette	When driver's hand moves in the direction of the cassette to insert it into player OR when driver's hand moves in the direction of the player to extract a cassette OR driver first glances at cassette (case) or direction of the cassette player.	When driver's hand has last interaction with player (i.e., pushing play) or driver puts cassette that has been retrieved either in a case or puts it down or driver has a last glance at device or cassette.
17, 18, 19	Distraction 1, 2, 3	Inserting/retrieving CD	When driver's hand moves in the direction of the CD to insert it into player OR when driver's hand moves in the direction of the player to extract a CD OR driver first glances at case or direction of the CD player.	When driver's hand has last interaction with player (i.e., pushing play) or driver puts CD that has been retrieved either in a case or puts it down or driver has a last glance at device or CD.
17, 18, 19	Distraction 1, 2, 3	Adjusting other devices integral to vehicle	When driver's hand moves in the direction of the device or driver first glances at that device.	When driver's hand has last interaction touching that device OR driver glances at that device for the last time.
17, 18, 19	Distraction 1, 2, 3	Looking at previous crash or incident	When driver's glance is first directly on the accident or something related to the accident (i.e., police officer standing on the side of the road)	When driver has taken his/her last direct glance at the accident.

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Distraction Start and Stop Points

Variable #	Variable Name	Categories	Event Start Point	Event Stop Point
17, 18, 19	Distraction 1, 2, 3	Looking at pedestrian	When driver first glances at pedestrian.	When driver has taken his/her last glance at the pedestrian.
17, 18, 19	Distraction 1, 2, 3	Looking at animal	When driver first glances at the animal.	When driver has taken his/her last glance at the animal.
17, 18, 19	Distraction 1, 2, 3	Looking at an object	When driver first glances at the object.	When driver has taken his/her last glance at the object.
17, 18, 19	Distraction 1, 2, 3	Distracted by construction	When driver first glances at an object or person in the construction zone.	When driver has taken his/her last glance at an object or person in the construction zone.
17, 18, 19	Distraction 1, 2, 3	Other external distraction	When distraction begins (specifics depend upon particular type of distraction)	When distraction ends (specifics depend upon particular type of distraction)
17, 18, 19	Distraction 1, 2, 3	Eating with utensils	When driver first picks up the food to be eaten or the utensil to eat it with.	When driver does the last of one of the following: (1) finishes chewing, (2) puts food or utensil down and lets go of it or hand that is holding food/utensil is still (i.e., in lap or on steering wheel)
17, 18, 19	Distraction 1, 2, 3	Eating without utensils	When driver first picks up the food to be eaten.	When driver does the last of one of the following: (1) finishes chewing, (2) puts food down and lets go of it or hand that is holding food is still (i.e., in lap or on steering wheel)
17, 18, 19	Distraction 1, 2, 3	Drinking with lid and straw	When driver first picks up the drink to be drunk.	When driver puts drink down and lets go of it or hand that is holding the drink is still (i.e., in lap or on steering wheel)
17, 18, 19	Distraction 1, 2, 3	Drinking with lid, no straw	When driver first picks up the drink to be drunk.	When driver puts drink down and lets go of it or hand that is holding the drink is still (i.e., in lap or on steering wheel)
17, 18, 19	Distraction 1, 2, 3	Drinking with straw, no lid	When driver first picks up the drink to be drunk.	When driver puts drink down and lets go of it or hand that is holding the drink is still (i.e., in lap or on steering wheel)
17, 18, 19	Distraction 1, 2, 3	Drinking from an open container	When driver first picks up the drink to be drunk.	When driver puts drink down and lets go of it or hand that is holding the drink is still (i.e., in lap or on steering wheel)
17, 18, 19	Distraction 1, 2, 3	Reaching for cigar/cigarette	When driver first starts to move hand to reach for cigar/cigarette or glances in that direction followed by hand moving for cigar/cigarette.	When driver puts the cigar/cigarette in mouth and last touches cigar/cigarette before the process of lighting it has begun.

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Distraction Start and Stop Points

Variable #	Variable Name	Categories	Event Start Point	Event Stop Point
17, 18, 19	Distraction 1, 2, 3	Lighting cigar/cigarette	When driver first starts to move hand to reach for lighter or glances in that direction followed by hand moving for lighter.	When driver starts to let go of lighter, OR in the case of an in-dash lighter, when lighter is place back in dashboard and driver lets go of it OR last glance to either of these devices.
17, 18, 19	Distraction 1, 2, 3	Smoking cigar/cigarette	When driver lets go of lighter and driver has a lit cigar/cigarette in mouth or hand.	This would be the last frame number before driver starts to move cigar/cigarette towards ashtray or device for extinguishing cigar/cigarette.
17, 18, 19	Distraction 1, 2, 3	Extinguishing cigar/cigarette	When driver's hand starts to move cigarette towards extinguishing device.	When driver last touches cigar/cigarette.
17, 18, 19	Distraction 1, 2, 3	Combing/brushing/ fixing hair	When driver's hand first moves towards hair (would not include reaching for hairbrush, would be after having hairbrush in hand).	When driver's hand/brush/comb last touches hair.
17, 18, 19	Distraction 1, 2, 3	Applying make-up	When driver's hand first moves towards makeup in such a manner that it will be applied to body (would not include getting makeup out of purse, would be after having makeup in hand and hand moving in the direction of opening up makeup container i.e., flipping a compact lid open, or taking top off of lip gloss)	When driver's last touches body to apply makeup and/or last checks self in mirror, whichever step comes last. This would include smoothing out makeup that was just applied.
17, 18, 19	Distraction 1, 2, 3	Shaving	When driver has the razor in hand and hand moves towards face.	When razor last touches face and/or driver last checks self in mirror, whichever step comes last.
17, 18, 19	Distraction 1, 2, 3	Brushing/flossing teeth	When driver has toothbrush, floss or oral hygiene product in hand. For floss this would start when the package is in hand, before they actually get the piece of floss out.	When toothbrush, floss, or oral hygiene product last touch driver's mouth and/or driver spits out toothpaste and/or driver checks teeth in mirror, whichever step comes last.
17, 18, 19	Distraction 1, 2, 3	Biting nails/cuticles	When driver's hand first moves towards mouth.	When driver's hand last touches mouth and/or removing nail or cuticle bitten off finger nail from driver's mouth.
17, 18, 19	Distraction 1, 2, 3	Removing/adjusting jewelry	When driver's hand first moves towards jewelry.	When driver's hand last touches jewelry if adjusting jewelry or the driver lets go of jewelry if removing jewelry, whichever step comes last.

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Distraction Start and Stop Points

Variable #	Variable Name	Categories	Event Start Point	Event Stop Point
17, 18, 19	Distraction 1, 2, 3	Removing/inserting contact lenses	When driver's hand first moves towards eye to remove contact or interact with contact OR if inserting contact it would be when driver first opens contact lens case to expose contact.	When driver's hand last touches eyeball if inserting contact OR when driver last touches contact if removing it or adjusting it in the eye, whichever steps comes last.
17, 18, 19	Distraction 1, 2, 3	Other personal hygiene	When driver has first interaction.	When driver has last interaction.
17, 18, 19	Distraction 1, 2, 3	Inattention to the Forward Roadway - Left window	When driver's eyes first fixate on the left window.	When driver's eyes first fixate on the next glance location after moving away from the left window glance for the last time.
17, 18, 19	Distraction 1, 2, 3	Inattention to the Forward Roadway - Left mirror	When driver's eyes first fixate on the left rear-view mirror.	When driver's eyes first fixate on the next glance location after moving away from the left driver's side mirror for the last time.
17, 18, 19	Distraction 1, 2, 3	Inattention to the Forward Roadway - Center mirror	When driver's eyes first fixate on the center rear-view mirror.	When driver's eyes first fixate on the next glance location after moving away from the center rear-view mirror for the last time.
17, 18, 19	Distraction 1, 2, 3	Inattention to the Forward Roadway - Right mirror	When driver's eyes first fixate on the right rear-view mirror.	When driver's eyes first fixate on the next glance location after moving away from the right passenger's side mirror for the last time.
17, 18, 19	Distraction 1, 2, 3	Inattention to the Forward Roadway - Right window	When driver's eyes first fixate on the right window.	When driver's eyes first fixate on the next glance location after moving away from the right window glance for the last time.
17, 18, 19	Distraction 1, 2, 3	No analyzed data		