Document 1

## **Table of Causes of Accidents**

		1 (1) Intersection – non-signaled												Roa	d enviro	nments t	that cau	se accio	dents								(1/2
		Accident process			-	F	Road ali	gnment					factors section s	shape			La	nes/wid	ith	<del> </del>				nment fa s/structu			—
							2	3	4	5	6	7	8	9	10	11		13	14	15	16	17		19		21	22
Type of accident	Accident process pattern No.	State of occurrence of accidents	c	heck points of the road environment that causes accidents		Sharp curve before an intersection	ong steep downhill gradient	Drest	ong straight section before an ntersection	Corner cut-off with large radius	Corner cut-off with small radius	Acute angle intersection	Obtuse angle intersection	Complexly shaped intersection	Drivers tend to drive fast in a large neesection	Long crossing distance for pedestrians and bicycles	Iwo or more right/left turn lanes	Varrow major road	Changing lane operation (through lane changes to a left or right turn lane)	A bicycle crossing zone at a location with a pedestrian crosswalk	Dark intersection where pedestrians and parked vehicles are difficult to see	Poorly located and maintained trees etc. on the center median	Poorly located and maintained regetation, signboards, etc. on the sidewalks	nappropriately located traffic signs and oad surface indicators with unsuitable contents (unclear and complex)	3ridge piers and other structures	Same lanes used for right and left turn rehicles and for through vehicles	Vehicles turning right or left leave the
	1	Did the intersection collision occur because a driver entered the intersection without confirming safety because the driver was unaware of the need to confirm safety?  Failure to confirm safety	→ 5	Are there elements that prevent awareness of the need to try to confirm safety, stop, then advance slowly?	<b>→</b>		-		4-5							_ ,,		13-5						19-5	<b>1</b>	,	
n collision		Did the intersection collision occur because a driver attempted to confirm safety, but entered the intersection without being able to do so?  Cannot see the vehicle	→ 1	Are there elements that block the view of drivers?	<b>→</b>	1-1		3-1				7-1										17-1	18-1		20-1		
Intersection co	2	Cannot see the vehicle	→ 2	Are there elements that distract drivers so they are not attentive?	<b>→</b>					ī				9-2										19-2			
	3	Did the intersection collision occur because a driver tried to confirm safety and decided it was safe to proceed?  Cannot stop	→ 4	Are there elements that encourage drivers to move forward, start to move, or to cut in dangerously?	<b>→</b>																						
		Did the rear-end collision occur because a driver did not check the car ahead on time?	→ 1	Are there elements that obscure a driver's view of vehicles ahead?	<b>→</b>	1-1		3-1														17-1	18-1			,	
c	2	Noticed too late	→ 2	Are there elements that distract a driver so he is not attentive?	<b>→</b>									9-2						15-2				19-2			
ear-end collisio	4	Did the rear-end collision occur because a driver checked for safety, made a judgment and took action, but avoided the other car too late?  Cannot stop	→ 14	Are there elements that encourage drivers to make frequent emergency stops, to decelerate, or to change lanes on the main road?	<b>→</b>						6-14	7-14		9-14					14-14					19-14		21-14	22-1
Re	5	Did the rear-end collision occur because a driver abruptly stopped or changed lanes in order to avoid danger?  Dangerous vehicle  Avoiding danger  Avoiding danger	→ 15	Check for elements that cause accidents by drivers avoiding other danger.	<b>→</b>	1-15	2-15	3-15	4-15	5-15	6-15	7-15	8-15	9-15	10-15	11-15		13-15	14-15	15-15	16-15	17-15	18-15	19-15	20-15	21-15	22-1
-		Did the right turn collision occur because a driver attempted to confirm safety, but turned right without succeeding in confirming safety?	→ 1	Are there elements that obscure the view of the road ahead of drivers turning right?	<b>→</b>	1-1		3-1														17-1			20-1		
lht turn	2	Cannot see the vehicle	→ 2	Are there elements that distract drivers turning right so they are not attentive?	<b>→</b>									9-2										19-2			
During right turn	3	Did the right turn collision occur because a driver tried to confirm safety, decided that it was possible to turn right, and tried to turn right?  Dangerous through travel	<b>→</b> 4	Are there elements that encourage dangerous right turns?	<b>→</b>										10-4						:					21-4	
	3	Dangerous right turn	→ 7	Are there elements that cause drivers turning right to misunderstand the behavior of oncoming traffic?	<b>→</b>		2-7		4-7									`									
crossing	1	Did the vehicle hit the pedestrian crossing the road at a place where the driver did not know that pedestrians cross the road?  Dangerous crossing	→ 13	Are there elements that encourage pedestrians to cross roads dangerously.												11-13											
Other cro	2	Did the vehicle hit the pedestrian because the driver tried to confirm safety, but proceeded without being able to see the pedestrian?	→ 1	Are there elements that block the view of drivers?	<b>→</b>	1-1		3-1				7-1									16-1	17-1			20-1		
	1 -	nor be seen		Are there elements that distract a driver so	1 7		1				1	1	1									1		1	1	1	1

<sup>\*</sup> Accident process pattern No. 5 is an accident that occurs when a driver has made an emergency stop or lane change to avoid danger, and it is difficult to hypothesize causes of this type of accident. So for this countermeasure (Cause code O-15), refer to other types of accidents.

<sup>\*</sup> Although causes of accidents are recorded for road environments that cause accidents, there are cases where the columns below them are all empty columns. This has been done so that the contents can be expanded by accumulating future data and obtaining the views of users of this manual.

		(1) Intersection – non-signaled										-				vironmer raffic env				3							2/2)
		Accident process					Accessories/ structure			Roadsi	ide envi	ronmen	t			surface itions			Signal	S		Congestion/ stopping			Others		
							23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	40	41	42	43	44
Type of accident	Accident process pattern No.	State of occurrence of accidents		Che	ck points of the road environment that causes accidents		Oncoming right turn vehicles stopping at inappropriate locations	Obstructions to vision on the road sides (buildings, walls, etc.)	Rows of bright structures lining the roadway	Facilities that distract drivers	Heavily used roadside facility driveway exit/entrance or narrow street	Unclear roadside facility driveway exit/entrance or narrow street	Driveways of facilities along the roadside entering the intersection	Visibility reduced by sunlight in the morning and in the west	Deteriorated road surface paving (ruts and cracks)	Poor drainage	Poorly located signals that are difficult to see	Short time available for forward movement	Short clearance time	Signal phase operation that is difficult to understand (complex, time differences)	Deceleration and stopping of right and left turn vehicles on main road	Congested main road	Adjoining intersections	A railway crossing adjoining the intersection	No crossing facilities at a location they are needed	Motorcycles and cyclists weaving through traffic	On-street parking and stopped busses obstructing traffic movement
	1	Did the intersection collision occur because a driver entered the intersection without confirming safety because the driver was unaware of the need to confirm safety?	<b>→</b>	- 10	Are there elements that prevent awareness of the need to try to confirm safety, stop, then advance slowly?	→							29-5	30-5									40-5	41-5			
n collision	2	Did the intersection collision occur because a driver attempted to confirm safety, but entered the intersection without being able to do so?  Cannot see the vehicle	<b>→</b>		Are there elements that block the view of drivers?	<b>→</b>		24-1	4													38-1					44-1
Intersection co	2	Cannot see the vehicle	<b>→</b>	2	Are there elements that distract drivers so they are not attentive?	→				26-2				30-2									40-2	41-2		43-2	
	3	Did the intersection collision occur because a driver tried to confirm safety and decided it was safe to proceed?  Cannot stop	<b>→</b>	10	Are there elements that encourage drivers to move forward, start to move, or to cut in dangerously?	<b>→</b>	·																				
	2	Did the rear-end collision occur because a driver did not check the car ahead on time?	<b>→</b>	1	Are there elements that obscure a driver's view of vehicles ahead?	<b>→</b>		24-1															-				
5	2	Noticed too late	<b>→</b>	2	Are there elements that distract a driver so he is not attentive?	<b>→</b>								30-2									40-2	41-2			
Rear-end collisi	4	Did the rear-end collision occur because a driver checked for safety, made a judgment and took action, but avoided the other car too late?  Cannot stop	<b>→</b>		Are there elements that encourage drivers to make frequent emergency stops, to decelerate, or to change lanes on the main road?	<b>→</b>				26-14			29-14		31-14	32-14		-					40-14	41-14			44-14
α	5	Did the rear-end collision occur because a driver abruptly stopped or changed lanes in order to avoid danger?  Dangerous vehicle  Avoiding danger  Avoiding danger	<b>→</b>	15	Check for elements that cause accidents by drivers avoiding other danger.	<b>→</b>	23-15	24-15	25-15	26-15			29-15	30-15	31-15	32-15						38-15	40-15	41-15	42-15	43-15	44-15
		Did the right turn collision occur because a driver attempted to confirm safety, but turned right without succeeding in confirming safety?	<b>→</b>	1	Are there elements that obscure the view of the road ahead of drivers turning right?	<b>→</b>	23-1															38-1					
right turn	2	Cannot see the vehicle	<b>→</b>	2	Are there elements that distract drivers turning right so they are not attentive?	<b>→</b>				26-2															42-2	43-2	
During rig		Did the right turn collision occur because a driver tried to confirm safety, decided that it was possible to turn right, and tried to turn right?  Dangerous through travel	<b>→</b>		Are there elements that encourage dangerous right turns?	<b>→</b>						;								-		•					
	3	Dangerous right turn	<b>→</b>	7	Are there elements that cause drivers turning right to misunderstand the behavior of oncoming traffic?	<b>→</b>																					
ossing		Did the vehicle hit the pedestrian crossing the road at a place where the driver did not know that pedestrians cross the road?  Dangerous crossing	<b>→</b>	13	Are there elements that encourage pedestrians to cross roads dangerously.	<b>→</b>																38-13		:	42-13		
Other cr		Did the vehicle hit the pedestrian because the driver tried to confirm safety, but proceeded without being able to see the pedestrian?	<b>→</b>		Are there elements that block the view of drivers?	<b>→</b>		24-1	25-1													38-1		_			44-1
	-	nor be seen	-	2	Are there elements that distract a driver so he is not attentive?	→				26-2																	

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		(2) Intersection - Signaleu - 3 Toaus			T							Road	factors	F	Road en	vironme	ents tha	cause	accider	nts		7	raffic en	vironm	ent fact	ors		=
		Accident process			þ			gnment				Inters	section :	<del>,</del>		T 44	<del></del>	nes/wid		<u> </u>			Access	ories/s	tructures	s		
			1	i		1	2	3	4	5	6	7	8	9	10_	11	12	13	14	15	16	17 ci	18	19	20	21	22	23 ta
Type of accident	Accident process pattern No.	State of occurrence of accidents		heck points of the road environment that causes accidents		Sharp curve before an intersection	Long steep downhill gradient	Crest	Long straight section before an intersection	Corner cut-off with large radius	Corner cut-off with small radius	Acute angle intersection	Obtuse angle intersection	Complexly shaped intersection	Drivers tend to drive fast in a large intersection	Long crossing distance for pedestrians and bicycles	Two or more right/left turn lanes	Narrow major road	Changing lane operation (through lane changes to a left or right turn lane)	A bicycle crossing zone at a location with a pedestrian crosswalk	Dark intersection where pedestrians and parked vehicles are difficult to see	Poorly located and maintained trees etc. on the center median	1 9	Inappropriately located traffic signs and road surface indicators with unsuitable contents functear and complex)	5 I +⊇	Same lanes used for right and left tum vehicles and for through vehicles	\$ <u>a</u>	Oncoming right turn vehicles stopping a inappropriate locations
		Did the rear-end collision occur because a driver did not check the car ahead on time?	<b>→</b> 1	Are there elements that obscure a driver's view of vehicles ahead?	→	1-1		3-1														17-1	18-1					
	2	Noticed too late	→ 2	Are there elements that distract a driver so he is not attentive?	<b>→</b>															15-2				19-2				
r-end collision	4	Did the rear-end collision occur because a driver checked for safety, made a judgment and took action, but avoided the other car too late?  Cannot stop	→ 14	Are there elements that encourage drivers to make frequent emergency stops, to decelerate, or to change lanes on the main road?	<b>→</b>						6-14	7-14		9-14					14-14					19-14		21-14	22-14	
Rea	5	Did the rear-end collision occur because a driver abruptly stopped or changed lanes in order to avoid danger?  Dangerous vehicle  Avoiding danger	→ 15	Check for elements that cause accidents by drivers avoiding other danger.	<b>→</b>	1-15	2-15	3-15	4-15	5-15	6-15	7-15	8-15	9-15	10-15	11-15			14-15	15-15	16-15	17-15	18-15	19-15	20-15	21-15	22-15	23-15
	1	Did the intersection collision occur because a driver entered the intersection without confirming safety because the driver was unaware of the need to confirm safety?  Failure to confirm safety	→ 5	Are there elements that prevent awareness of the need to try to confirm safety, stop, then advance slowly?	<b>→</b>				4-5															19-5				
collision		Did the intersection collision occur because a driver attempted to confirm safety, but entered the intersection without being able to do so?	→ 1	Are there elements that block the view of drivers?	<b>→</b>	1-1		3-1				7-1										17-1	18-1		20-1			
Intersection colli	2	Cannot see the vehicle Cannot see the vehicle	→ 2	Are there elements that distract drivers so they are not attentive?	<b>→</b>																			19-2				
-	3	Did the intersection collision occur because a driver tried to confirm safety and decided it was safe to proceed?  Cannot stop	→ 4	Are there elements that encourage drivers to move forward, start to move, or to cut in dangerously?	→																							
		Did the right turn collision occur because a driver attempted to confirm safety, but turned right without succeeding in confirming safety?	→ 1	Are there elements that obscure the view of the road ahead of drivers turning right?	<b>→</b>	1-1		3-1														17-1	ļ		20-1			23-1
right turn	2	Cannot see the vehicle	→ 2	Are there elements that distract drivers turning right so they are not attentive?	<b>→</b>									9-2										19-2				
During riç		Did the right turn collision occur because a driver tried to confirm safety, decided that it was possible to turn right, and tried to turn right?  Dangerous through travel	→ 4	Are there elements that encourage dangerous right turns?	<b>→</b>																					21-4		<b> </b>
	3	Dangerous right turn	→ 7	Are there elements that cause drivers turning right to misunderstand the behavior of oncoming traffic?	<b>→</b>		2-7		4-7																			
crosswalk	1	Was the pedestrian hit by the vehicle when crossing the road while ignoring the signal?  Dangerous crossing  Dangerous crossing	<b>→</b> 1:		<b>→</b>											11-13	3											
gina		Did the vehicle hit the pedestrian because the driver tried to confirm safety, but proceeded without being able to see the pedestrian?	→   1	Are there elements that block the view of drivers?	<b> </b> →			3-1													16-1	17-1	18-1		20-1			
ossin		<b>A</b>	→ 2	Are there elements that distract a driver so he is not attentive?	<b>→</b>					5-2			8-2	9-2	10-2	:								19-2	2			
While cr	2	Pedestrian not visible	<b>-→</b>   ;	Are there elements that obscure the intersection?																								
5			<b>→</b>	Are there elements that encourage drivers to move forward, start to move, or to cut in dangerously?	<b>→</b>																							

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		(2) Intersection – signaled – 3 roads		<u> </u>									Road	environm				nts							(2/2)
		Accident process		(		Accessorie	es/structure	<u> </u>	Roads	side envir	onment			Traffic e	Tivironini		Signals	- <u></u>		Congestion/			Others		
				1		24	25	26	27			30	cond 31	itions 32	33	34	35		37	stopping 38	40	41	42	43	44
Type of accident	Accident process pattern No.	State of occurrence of accidents		Check points of the road environment that ca accidents	uses	Obstructions to vision on the road sides (buildings, walls, etc.)	Rows of bright structures lining the roadway	Facilities that distract drivers	Heavily used roadside facility driveway exit/entrance or narrow street	Unclear roadside facility driveway exit/entrance or narrow street	Driveways of facilities along the roadside entering the intersection	Visibility reduced by sunlight in the morning and in the west	Deteriorated road surface paving (ruts and cracks)		Poorly located signals that are difficult to see	Short time available for forward movement		Signal phase operation that is difficult to understand (complex, time differences)	1	Congested main road	Adjoining intersections	A railway crossing adjoining the intersection	No crossing facilities at a location they are needed	Motorcycles and cyclists weaving through traffic	On-street parking and stopped busses obstructing traffic movement
	2	Did the rear-end collision occur because a driver did not check the car ahead on time?	→	Are there elements that obscure a driver view of vehicles ahead?	<b>→</b>	24-1																			
۔		Noticed too late	<b>→</b>		<b>→</b>							30-2			33-2						40-2	41-2			
Rear-end collisio	4	Did the rear-end collision occur because a driver checked for safety, made a judgment and took action, but avoided the other car too late?  Cannot stop	→ 1	Are there elements that encourage drive to make frequent emergency stops, to decelerate, or to change lanes on the moroad?				26-14			29-14		31-14	32-14							40-14	41-14			44-14
Res	5	Did the rear-end collision occur because a driver abruptly stopped or changed lanes in order to avoid danger?  Dangerous vehicle  Avoiding danger	<b>→</b> 1	Check for elements that cause accidents drivers avoiding other danger.	>	24-15	25-15	26-15			29-15	30-15	31-15	32-15	33-15	34-15	35-15	36-15	37-15	38-15	40-15	41-15	42-15	43-15	44-15
	1.	Did the intersection collision occur because a driver entered the intersection without confirming safety because the driver was unaware of the need to confirm safety?  Failure to confirm safety	<b>→</b>	Are there elements that prevent awaren of the need to try to confirm safety, stop, then advance slowly?	ess →						29-5	30-5			33-5						40-5	41-5			
ection collision	2	Did the intersection collision occur because a driver attempted to confirm safety, but entered the intersection without being able to do so?  Cannot see the vehicle	<b>→</b>	Are there elements that block the view of drivers?  Are there elements that distract drivers	<b>→</b>	24-1														38-1					44-1
Intersecti		Cannot see the vehicle	→	they are not attentive?	<b>→</b>			26-2				30-2			33-2						40-2	41-2		43-2	
	3	Did the intersection collision occur because a driver tried to confirm safety and decided it was safe to proceed?  Cannot stop	<b>→</b>	Are there elements that encourage drive to move forward, start to move, or to cut dangerously?	rs in →											34-4	35-4								
		Did the right turn collision occur because a driver attempted to confirm safety, but turned right without succeeding in confirming safety?	→	Are there elements that obscure the vier the road ahead of drivers turning right?	v of →										33-1					38-1					
right turn	2	Cannot see the vehicle	<b>→</b>	Are there elements that distract drivers turning right so they are not attentive?	<b>→</b>			26-2															42-2	43-2	
During ri	3	Did the right turn collision occur because a driver tried to confirm safety, decided that it was possible to turn right, and tried to turn right?  Dangerous through travel	<b>→</b>	Are there elements that encourage dangerous right turns?	<b>→</b>											34-4									
		Dangerous right turn	→	Are there elements that cause drivers turning right to misunderstand the beha of oncoming traffic?	vior →													36-7	,						
crosswalk	1	Was the pedestrian hit by the vehicle when crossing the road while ignoring the signal?  Dangerous crossing  Dangerous crossing	<b>→</b>	Are there elements that encourage pedestrians to cross roads dangerously	<b>→</b>								:			34-13	3			38-13					
crossing in a crossw		Did the vehicle hit the pedestrian because the driver tried to confirm safety, but proceeded without being able to see the pedestrian?	<b>→</b>	1 Are there elements that block the view drivers?  Are there elements that distract a driver		24-1	25-1										-	-	-	38-1			-	-	<u> </u>
	,	<b>★</b>	<b>→</b>	he is not attentive?  Are there elements that distract a diversity he is not attentive?				26-2			-			-	33-2	<u> </u>		-			<u> </u>	41-2	_	-	-
While	•	Pedestrian not visible	<b>→</b>	5 intersection?  Are there elements that encourage driv					ļ							-		-			40-5	-	+	-	1
			→	4 to move forward, start to move, or to cudangerously?		<u></u>										34-4			37-4				<u></u>		

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		(3) Intersection – signaled – 4 roads – 2-lanes of less x 2-												Roa	ad enviro	nments	that ca	use acc	idents	1		T-#					•/ <b>-</b> /
		Accident process					Road a	lignmen	t				factors section	shape			L	anes/w	idth					nment fa s/structur			
						1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
Type of accident	Accident process pattern No.	State of occurrence of accidents	C	heck points of the road environment that causes accidents		Sharp curve before an intersection	Long steep downhill gradient	Crest	Long straight section before an intersection	Corner cut-off with large radius	Corner cut-off with small radius	Acute angle intersection	Obtuse angle intersection	Complexly shaped intersection	Drivers tend to drive fast in a large intersection	Long crossing distance for pedestrians and bicycles	Two or more right/left turn lanes	Narrow major road	Changing lane operation (through lane changes to a left or right turn lane)	A bicycle crossing zone at a location with a pedestrian crosswalk	Dark intersection where pedestrians and parked vehicles are difficult to see	Poorly located and maintained trees etc. on the center median	t te	Inappropriately located traffic signs and road surface indicators with unsuitable contents (unclear and complex)	Bridge piers and other structures		Vehicles turning right or left leave the right and left turning lanes
		Did the rear-end collision occur because a driver did not check the car ahead on time?	→ 1	Are there elements that obscure a driver's view of vehicles ahead?	->	1-1		3-1															18-1				
	2	Noticed too late	→ 2	Are there elements that distract a driver so he is not attentive?	<b>→</b>															15-2	!			19-2			
ar-end collision	4	Did the rear-end collision occur because a driver checked for safety, made a judgment and took action, but avoided the other car too late?  Cannot stop	→ 14	Are there elements that encourage drivers to make frequent emergency stops, to decelerate, or to change lanes on the main road?	<b>→</b>						6-14	7-14							14-14	•				19-14		21-14	22-14
Rea	5	Did the rear-end collision occur because a driver abruptly stopped or changed lanes in order to avoid danger?  Dangerous vehicle  Avoiding danger  Avoiding danger	→ 15		<b>→</b>	1-15	2-15	3-15	4-15		6-15	7-15	8-15	9-15					14-15	5 15-18	5		18-15	19-15	20-15	21-15	22-15
	1	Did the intersection collision occur because a driver entered the intersection without confirming safety because the driver was unaware of the need to confirm safety?	→ 5	Are there elements that prevent awareness of the need to try to confirm safety, stop, then advance slowly?	<b>→</b>				4-5															19-5			
collision		Did the intersection collision occur because a driver attempted to confirm safety, but entered the intersection without being able to do so?	→ 1	Are there elements that block the view of drivers?	<b>→</b>	1-1		3-1				7-1											18-1		20-1		
Intersection	2	Cannot see the vehicle  Cannot see the vehicle	→ 2	Are there elements that distract drivers so they are not attentive?	<b>→</b>																			19-2			
=	3	Did the intersection collision occur because a driver tried to confirm safety and decided it was safe to proceed?  Cannot stop	→ 4	,	<b>→</b>																						
	1 1	Did the right turn collision occur because a driver attempted to confirm safety, but turned right without succeeding in confirming safety?	→ 1	Are there elements that obscure the view of the road ahead of drivers turning right?	<b>→</b>	1-1		3-1																			
E	2	Cannot see the vehicle	→ 2	Are there elements that distract drivers turning right so they are not attentive?	<b>→</b>									9-2										19-2			L
During right turn		Did the right turn collision occur because a driver tried to confirm safety, decided that it was possible to turn right, and tried to turn right?  Dangerous through travel  Dangerous	→ 4		<b>→</b>																					21-4	
	3	right turn	→ 7	Are there elements that cause drivers turning right to misunderstand the behavior of oncoming traffic?	<b>→</b>		2-7		4-7																		
left turn	1	Did this collision occur because the driver turned left without predicting a vehicle ahead?  Abruptly turning left	→ (	Are there elements that encourage abrupt left turning?	<b>→</b>								8-6											19-6			
During a l		Did the collision occur while the driver turned left after checking for safety but without confirming safety?  Cannot see the vehicle	<b>→</b> .:	Are there elements that distract a driver so he is not attentive?	->																						

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		Accident process											F		rironmen affic env				S							(2/2)
		, .		_		ccessories/ structure			Roadsi	ide envi	ironmen	l		cond	surface itions			Signal			Congestion/ stopping	1		Others		
			T			23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	40	41	42	43	44
Type of accident	Accident process pattern No.	State of occurrence of accidents	Che	eck points of the road environment that causes accidents	the state of the s	Oncoming right turn vehicles stopping at inappropriate locations	Obstructions to vision on the road sides (buildings, walls, etc.)	Nows of bright structures lining the oadway	acilities that distract drivers	Heavily used roadside facility driveway sxit/entrance or narrow street	Unclear roadside facility driveway sxiVentrance or narrow street	Driveways of facilities along the oadside entering the intersection	/isibility reduced by sunlight in the norning and in the west	Deteriorated road surface paving (ruts and cracks)	Poor drainage	Poorly located signals that are difficult o see	Short time available for forward movement	Short clearance time	Signal phase operation that is difficult to understand (complex, time differences)	Deceleration and stopping of right and left turn vehicles on main road	Congested main road	Adjoining intersections	A railway crossing adjoining the ntersection	No crossing facilities at a location they are needed	Motorcycles and cyclists weaving hrough traffic	On-street parking and stopped busses obstructing traffic movement
		Did the rear-end collision occur because a driver did not check the car ahead on time?		Are there elements that obscure a driver's view of vehicles ahead?  →			24-1																			
	2	Noticed too late		Are there elements that distract a driver so he is not attentive? →									30-2			33-2						40-2	41-2			
r-end collision	4	Did the rear-end collision occur because a driver checked for safety, made a judgment and took action, but avoided the other car too late?  Cannot stop	1 1	Are there elements that encourage drivers to make frequent emergency stops, to decelerate, or to change lanes on the main road?  →					26-14			29-14		31-14	32-14							40-14	41-14			44-14
Rea	5	Did the rear-end collision occur because a driver abruptly stopped or changed lanes in order to avoid danger?  Dangerous vehicle  Avoiding danger  Avoiding danger		Check for elements that cause accidents by drivers avoiding other danger.  →		23-15	24-15		26-15			29-15	30-15	31-15	32-15	33-15	34-15	35-15	36-15		38-15	40-15	41-15	42-15	43-15	44-15
	1	Did the intersection collision occur because a driver entered the intersection without confirming safety because the driver was unaware of the need to confirm safety?	→ 5	Are there elements that prevent awareness of the need to try to confirm safety, stop, then advance slowly?  →								29-15	30-5	1		33-5			-			40-5	41-5			
section collision	2	Did the intersection collision occur because a driver attempted to confirm safety, but entered the intersection without being able to do so?  Cannot see the vehicle		Are there elements that block the view of drivers?			24-1														38-1					44-1
Intersectio	2	Cannot see the vehicle	→ 2	Are there elements that distract drivers so they are not attentive? →		,			26-2				30-2			33-2						40-2	41-2		43-2	
_	3	Did the intersection collision occur because a driver tried to confirm safety and decided it was safe to proceed?  Cannot stop		Are there elements that encourage drivers to move forward, start to move, or to cut in dangerously?  →													34-4	35-4			<u> </u>					
	2	Did the right turn collision occur because a driver attempted to confirm safety, but turned right without succeeding in confirming safety?	→ 1	Are there elements that obscure the view of the road ahead of drivers turning right? →	•	23-1				-						33-1					38-1					
t turn	2	Cannot see the vehicle	→ 2	Are there elements that distract drivers turning right so they are not attentive?																				42-2	43-2	
During right		Did the right turn collision occur because a driver tried to confirm safety, decided that it was possible to turn right, and tried to turn right?  Dangerous through travel  Dangerous right turn	→ 4	Are there elements that encourage dangerous right turns?  →													34-4									
	3		→ 7	Are there elements that cause drivers turning right to misunderstand the behavior of oncoming traffic?  →	•														36-7							
a left turn	1	Did this collision occur because the driver turned left without predicting a vehicle ahead?  Abruptly turning left	→ 6	Are there elements that encourage abrupt left turning?  →	•			·				29-6														
During a	2	Did the collision occur while the driver turned left after checking for safety but without confirming safety?  Cannot see the vehicle	→ 2	Are there elements that distract a driver so he is not attentive?	•																				43-2	

<sup>\*</sup> Accident process pattern No. 5 is an accident that occurs when a driver has made an emergency stop or lane change to avoid danger, and it is difficult to hypothesize causes of this type of accident. So for this countermeasure (Cause code O-15), refer to other types of accidents.

		(4) Intersection – signaled – 4 roads – multi-lane road x 2			T									F	Road en	vironme	ents that	t cause	accide	nts								(1/2)
		Accident process			F		le heaf	ignmen					factors ection :	shane			1.	anes/wi	idth					nvironme sories/str				
	1				$\pm$	1	2	3		5	6	7	8	9	10	11	12		14	15	16			19			22	23
Type of accident	Accident process pattern No.	State of occurrence of accidents		Check points of the road environment that causes accidents		harp curve before an intersection	ong steep downhill gradient	vest	ong straight section before an ntersection	comer cut-off with large radius	corner cut-off with small radius	cute angle intersection	Obtuse angle intersection	complexly shaped intersection	Drivers tend to drive fast in a large intersection	ong crossing distance for pedestrians ind bicycles	wo or more right/left turn lanes	larrow major road	Changing lane operation (through lane changes to a left or right turn lane)	Abicycle crossing zone at a location with a pedestrian crosswalk	Dark intersection where pedestrians and parked vehicles are difficult to see	Poorly located and maintained trees	oorly located and maintained egetation, signboards, etc. on the idewalks	nappropriately located traffic signs and oad surface indicators with unsuitable ontents (unclear and complex)	dridge piers and other structures	Same lanes used for right and left turn vehicles and for through vehicles	ehicles turning right or left leave the ght and left turning lanes	Oncoming right turn vehicles stopping tinappropriate locations
		Did the rear-end collision occur because a driver did not check the car ahead on time?	→ 1	Are there elements that obscure a driver's view of vehicles ahead?	→	1-1		3-1	<u>.</u> =				<u> </u>		<u> </u>	- "	F		0.8	3	<u> 11.0</u>	17-1	18-1	= = 0		0 >		0.8
	2	Noticed too late	→ 2	Are there elements that distract a driver so he is not attentive?	<b>→</b>															15-2	_			19-2		-		
-end collision	4	Did the rear-end collision occur because a driver checked for safety, made a judgment and took action, but avoided the other car too late?  Cannot stop	→ 1	Are there elements that encourage drivers to make frequent emergency stops, to decelerate, or to change lanes on the main road?	<b>→</b>	-					6-14		,	9-14					14-14					19-14		21-14	22-14	
Rear	5	Did the rear-end collision occur because a driver abruptly stopped or changed lanes in order to avoid danger?  Dangerous vehicle  Avoiding danger  Avoiding danger	→ 1	Check for elements that cause accidents by drivers avoiding other danger.	→	1-15	2-15	3-15	4-15	5-15	6-15	7-15	8-15	9-15	10-15	11-15			14-15	15-15	16-15	17-15	18-15	19-15	20-15	21-15	22-15	23-15
		Did the right turn collision occur because a driver attempted to confirm safety, but turned right without succeeding in confirming safety?	→ 1	Are there elements that obscure the view of the road ahead of drivers turning right?	<b>→</b>	1-1		3-1								i.						17-1			20-1			23-1
turn	2	Cannot see the vehicle	→ 2	Are there elements that distract drivers turning right so they are not attentive?	<b>→</b>							ļ ———		9-2										19-2				
During right		Did the right turn collision occur because a driver tried to confirm safety, decided that it was possible to turn right, and tried to turn right?  Dangerous through travel  Dangerous	<b>→</b> 2	Are there elements that encourage dangerous right turns?	<b>→</b>			_							10-4											21-4		
	3	right turn		Are there elements that cause drivers turning right to misunderstand the behavior of oncoming traffic?	→		2-7		4-7							!												
	1	Did the intersection collision occur because a driver entered the intersection without confirming safety because the driver was unaware of the need to confirm safety?  Failure to confirm safety	→ {	Are there elements that prevent awareness of the need to try to confirm safety, stop, then advance slowly?	<b>→</b>				4-5															19-5				
n collision	2	Did the intersection collision occur because a driver attempted to confirm safety, but entered the intersection without being able to do so?	<b>→</b>	Are there elements that block the view of drivers?	<b>→</b>	1-1		3-1				7-1										17-1	18-1		20-1			
Intersection	_	Cannot see the vehicle  Cannot see the vehicle	→ :	Are there elements that distract drivers so they are not attentive?	→																			19-2				
	3	Did the intersection collision occur because a driver tried to confirm safety and decided it was safe to proceed?  Cannot stop	<b> </b> →   .	Are there elements that encourage drivers to move forward, start to move, or to cut in dangerously?	<b>→</b>																							
a crosswalk	1	Was the pedestrian hit by the vehicle when crossing the road while ignoring the signal?  Dangerous crossing  Dangerous crossing	→ 1	Are there elements that encourage pedestrians to cross roads dangerously.	<b>→</b>											11-13												
ing in		Did the vehicle hit the pedestrian because the driver tried to confirm safety, but proceeded without being able to see the pedestrian?	<b>→</b>	Are there elements that block the view of drivers?	<b>→</b>			3-1													16-1	17-1	18-1		20-1		<u> </u>	$\perp$
e cross	2	<b>★</b> >****	→ →	Are there elements that obscure the	→ →					5-2			8-2	9-2	10-2				+				<del> </del>	19-2	-		+	-
Whi		Pedestrian not visible	<b>→</b>	intersection?  Are there elements that encourage drivers	<b>→</b>				-		-				-		-		-				-	_		+	+	-

<sup>\*</sup> Accident process pattern No. 5 is an accident that occurs when a driver has made an emergency stop or lane change to avoid danger, and it is difficult to hypothesize causes of this type of accident. So for this countermeasure (Cause code O-15), refer to other types of accidents.

<sup>\*</sup> Although causes of accidents are recorded for road environments that cause accidents, there are cases where the columns below them are all empty columns. This has been done so that the contents can be expanded by accumulating future data and obtaining the views of users of this manual.

		(4) Intersection – signaled – 4 roads – multi-lane road x 2											Ro	ad enviro		that cau		ents						<u> </u>	(2/2)
		Accident process			1	Accessorie	s/structure		Roads	ide envir	onment		Road	surface litions	CONTRO		Signals			Congestion/ stopping			Others		
					$\top$	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	40	41	42	43	44
Type of accident	Accident process pattern No.	State of occurrence of accidents	С	heck points of the road environment that causes accidents		Obstructions to vision on the road sides (buildings, walls, etc.)	Jows of bright structures lining the cadway	-acilities that distract drivers	Heavily used roadside facility driveway sxifentrance or narrow street	Jnclear roadside facility driveway exit/entrance or narrow street	Driveways of facilities along the oadside entering the intersection	/isibility reduced by sunlight in the norning and in the west	Deteriorated road surface paving (ruts and cracks)	Poor drainage	Poorly located signals that are difficult to see	Short time available for forward movement	Short clearance time	Signal phase operation that is difficult to understand (complex, time differences)	Deceleration and stopping of right and left turn vehicles on main road	Songested main road	Adjoining intersections	A railway crossing adjoining the intersection	No crossing facilities at a location they are needed	Motorcycles and cyclists weaving through traffic	On-street parking and stopped busses obstructing traffic movement
	2	Did the rear-end collision occur because a driver did not check the car ahead on time?	→ 1	Are there elements that obscure a driver's view of vehicles ahead?	<b>→</b>	24-1	ш. ц.									5, 1	<u> </u>	<i>,</i>					2. (0		
	2	Noticed too late	→ 2	Are there elements that distract a driver so he is not attentive?	→							30-2			33-2						40-2	41-2			
ear-end collision	4	Did the rear-end collision occur because a driver checked for safety, made a judgment and took action, but avoided the other car too late?  Cannot stop	→ 14	Are there elements that encourage drivers to make frequent emergency stops, to decelerate, or to change lanes on the main road?	<b>→</b>			26-14			29-14		31-14	32-14							40-14	41-14			44-14
R	5	Did the rear-end collision occur because a driver abruptly stopped or changed lanes in order to avoid danger?  Dangerous vehicle  Pedestrian etc.  Avoiding danger	→ 15	Check for elements that cause accidents by drivers avoiding other danger.	<b>→</b>	24-15	25-15	26-15			29-15	30-15	31-15	32-15	33-15	34-15	35-15	36-15	37-15	38-15	40-15	41-15	42-15	43-15	44-15
	2	Did the right turn collision occur because a driver attempted to confirm safety, but turned right without succeeding in confirming safety?	→ 1	Are there elements that obscure the view of the road ahead of drivers turning right?	<b>→</b>										33-1					38-1					
right turn		Cannot see the vehicle	→ 2	Are there elements that distract drivers turning right so they are not attentive?	<b>→</b>			26-2															42-2	43-2	j
During righ		Did the right turn collision occur because a driver tried to confirm safety, decided that it was possible to turn right, and tried to turn right?  Dangerous through travel	→ 4	Are there elements that encourage dangerous right turns?	<b>→</b>									:		34-4		!							
٥	3	Dangerous right turn	→ 7	Are there elements that cause drivers turning right to misunderstand the behavior of oncoming traffic?	<b>→</b>													36-7							
	1	Did the intersection collision occur because a driver entered the intersection without confirming safety because the driver was unaware of the need to confirm safety?  Failure to confirm safety	→ 5	i	<b>→</b>						29-5	30-5			33-5						40-5	41-5			
collision		Did the intersection collision occur because a driver attempted to confirm safety, but entered the intersection without being able to do so?  Cannot see the vehicle	→ 1	Are there elements that block the view of drivers?	→	24-1							,							38-1					44-1
Intersection	2	Cannot see	→ 2	Are there elements that distract drivers so they are not attentive?	<b>→</b>			26-2				30-2			33-2						40-2	41-2		43-2	
	3	Did the intersection collision occur because a driver tried to confirm safety and decided it was safe to proceed?  Cannot stop	→ 4	Are there elements that encourage drivers to move forward, start to move, or to cut in dangerously?	<b>→</b>		<u> </u>									34-4	35-4								
a crosswalk	1	Was the pedestrian hit by the vehicle when crossing the road while ignoring the signal?  Dangerous crossing  Dangerous crossing	→ 13		<b>→</b>											34-13				38-13					
sing in		Did the vehicle hit the pedestrian because the driver tried to confirm safety, but proceeded without being able to see the pedestrian?	→ 1	Are there elements that block the view of drivers?	<b>→</b>	24-1	25-1													38-1					ļ
Sor	2	A	→ 2	Are there elements that distract a driver so he is not attentive?  Are there elements that obscure the	<b>→</b>			26-2		ļ		<u> </u>	1	<del> </del>	33-2		ļ					41-2			
While	-	Pedestrian not visible	→ 5	intersection?  Are there elements that encourage drivers	<b>→</b>	<del></del>				_	-		-	<del> </del>		1		-			40-5				
			→   4		→								] .			34-4		]	37-4						

<sup>\*</sup> Accident process pattern No. 5 is an accident that occurs when a driver has made an emergency stop or lane change to avoid danger, and it is difficult to hypothesize causes of this type of accident. So for this countermeasure (Cause code O-15), refer to other types of accidents.

		Accident process		iano rodu	丁					-		Pand	facto		ad enviro	nments	that cau	se acci	dents			T #	• • • • • • • • • • • • • • • • • • • •				(1/2)
<u></u>	,	ricelatin process				F		gnment					factors section				L	anes/wid					c enviro essorie				
						1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19		21	22
Type of accident	Accident process pattern No.	State of occurrence of accidents		Check points of the road environment that causes accidents		Sharp curve before an intersection	ong steep downhill gradient	Crest	ong straight section before an nersection	Corner cut-off with large radius	Corner cut-off with small radius	Acute angle intersection	Obtuse angle intersection	Complexly shaped intersection	Drivers tend to drive fast in a large ntersection	Long crossing distance for pedestrians and bicycles	Iwo or more right/left turn lanes	Varrow major road	Changing lane operation (through lane changes to a left or right turn lane)	icycle crossing a	Dark intersection where pedestrians and parked vehicles are difficult to see	Poorly located and maintained trees etc. on the center median	Poorly located and maintained egetation, signboards, etc. on the idewalks	nappropriately located traffic signs and oad surface indicators with unsuitable contents (unclear and complex)	sridge piers and other structures	same lanes used for right and left turn ehicles and for through vehicles	rehicles turning right or left leave the ight and left turning lanes
	2	Did the rear-end collision occur because a driver did not check the car ahead on time?	→ 1		→ 1	1-1-		3-1			Ŭ				<u> </u>			<b></b>		-		17-1	18-1	= = 0	ш	02 >	<u> </u>
		Noticed too late	→ 2		→															15-2				19-2			
Rear-end collision	4	Did the rear-end collision occur because a driver checked for safety, made a judgment and took action, but avoided the other car too late?  Cannot stop	→ 14	Are there elements that encourage drivers to make frequent emergency stops, to decelerate, or to change lanes on the main road?	<b>→</b>						6-14	7-14		9-14					14-14				:	19-14		21-14	22-14
ä	5	Did the rear-end collision occur because a driver abruptly stopped or changed lanes in order to avoid danger?  Dangerous vehicle  Avoiding danger  Avoiding danger  Avoiding danger	→ 15	Check for elements that cause accidents by drivers avoiding other danger.	→ 1	-15	2-15	3-15	4-15		6-15	7-15	8-15	9-15	10-15	,	12-15		14-15	15-15		17-15	18-15	19-15	20-15	21-15	22-15
	2	Did the right turn collision occur because a driver attempted to confirm safety, but turned right without succeeding in confirming safety?	→ 1	Are there elements that obscure the view of the road ahead of drivers turning right?	→ 1	1-1		3-1									12-1					17-1			20-1		
ring right turn	-	Cannot see the vehicle	→ 2	Are there elements that distract drivers turning right so they are not attentive?	→ /					:				9-2									-	19-2			
During ri		Did the right turn collision occur because a driver tried to confirm safety, decided that it was possible to turn right, and tried to turn right?  Dangerous through travel	→ 4	Are there elements that encourage dangerous right turns?	→										10-4											21-4	
	3	Dangerous right turn	→ 7	Are there elements that cause drivers turning right to misunderstand the behavior of oncoming traffic?	<b>→</b>		2-7		4-7																		
	1	Did the intersection collision occur because a driver entered the intersection without confirming safety because the driver was unaware of the need to confirm safety?	→ 5	Are there elements that prevent awareness of the need to try to confirm safety, stop, then advance slowly?	→				4-5															19-5			
on collision	2	Did the intersection collision occur because a driver attempted to confirm safety, but entered the intersection without being able to do so?  Cannot see the vehicle	→ 1		→ 1	1-1		3-1				7-1										17-1	18-1		20-1		
Intersection col	_	Cannot see the vehicle	→ 2		→												·							19-2			
	3	Did the intersection collision occur because a driver tried to confirm safety and decided it was safe to proceed?  Cannot stop	→ 4		→																						
During a left turn	1	Did this collision occur because the driver turned left without predicting a vehicle ahead?  Abruptly turning left	→ 6	Are there elements that encourage abrupt left turning?	<b>→</b>					-			8-6											19-6			
During a	2	Did the collision occur while the driver turned left after checking for safety but without confirming safety?  Cannot see the vehicle	<b>→</b> 2	Are there elements that distract a driver so he is not attentive?	<b>→</b>																						

<sup>\*</sup> Accident process pattern No. 5 is an accident that occurs when a driver has made an emergency stop or lane change to avoid danger, and it is difficult to hypothesize causes of this type of accident. So for this countermeasure (Cause code O-15), refer to other types of accidents.

<sup>\*</sup> Although causes of accidents are recorded for road environments that cause accidents, there are cases where the columns below them are all empty columns. This has been done so that the contents can be expanded by accumulating future data and obtaining the views of users of this manual.

Pattern (5) Intersection - signaled - 4 roads - multi-lane road x multi-lane road

		(5) Intersection – signaled – 4 roads – multi-lane road x n													vironme											-/2)
		Accident process			-	Accessories	1		Roadsi	de envi	ronment			Road :	raffic env surface	ironmer		Signats			Congestion/			Others		$\overline{}$
						/structure 23	24	25					30	cond 31	tions 32	33	34	35	36	37	stopping 38	40		42	43	44
Type of accident	Accident process pattern No.	State of occurrence of accidents	Cr	neck points of the road environment that causes accidents		Oncoming right turn vehicles stopping at inappropriate locations	Obstructions to vision on the road sides (buildings, walls, etc.)	Rows of bright structures lining the roadway	Facilities that distract drivers	Heavily used roadside facility driveway exit/entrance or narrow street	Unclear roadside facility driveway exit/entrance or narrow street	Driveways of facilities along the roadside entering the intersection	Visibility reduced by sunlight in the morning and in the west	Deteriorated road surface paving (ruts and cracks)	Poor drainage	Poorly located signals that are difficult to see	Short time available for forward movement	Short clearance time	Signal phase operation that is difficult to understand (complex, time differences)	Deceleration and stopping of right and left turn vehicles on main road	Congested main road	Adjoining intersections	A railway crossing adjoining the intersection	location they	Motorcycles and cyclists weaving through traffic	On-street parking and stopped busses obstructing traffic movement
	2	Did the rear-end collision occur because a driver did not check the car ahead on time?	→ 1	Are there elements that obscure a driver's view of vehicles ahead?	<b>→</b>		24-1																			
		Noticed too late	→ 2	Are there elements that distract a driver so he is not attentive?  Are there elements that encourage drivers	-						-		30-2			33-2						40-2	41-2	<u> </u>		
ar-end collision	4	Did the rear-end collision occur because a driver checked for safety, made a judgment and took action, but avoided the other car too late?  Cannot stop	→ 14	Are there elements that encourage drivers to make frequent emergency stops, to decelerate, or to change lanes on the main road?	<b>→</b>				26-14		ŕ	29-14		31-14	32-14							40-14	41-14			44-14
Rear	5	Did the rear-end collision occur because a driver abruptly stopped or changed lanes in order to avoid danger?  Dangerous vehicle Avoiding danger  Avoiding danger	→ 15	Check for elements that cause accidents by drivers avoiding other danger.	<b>→</b>	23-15	24-15		26-15			29-15	30-15	31-15	32-15	33-15	34-15	35-15	36-15		38-15	40-15	41-15	42-15	43-15	44-15
		Did the right turn collision occur because a driver attempted to confirm safety, but turned right without succeeding in confirming safety?	→ 1	Are there elements that obscure the view of the road ahead of drivers turning right?	<b>→</b>	23-1										33-1					38-1					
right turn	2	Cannot see the vehicle	→ 2	Are there elements that distract drivers turning right so they are not attentive?	<b>→</b>				26-2															42-2	43-2	
During ric		Did the right turn collision occur because a driver tried to confirm safety, decided that it was possible to turn right, and tried to turn right?  Dangerous through travel	→ 4	Are there elements that encourage dangerous right turns?	<b>→</b>												34-4									
	3	Dangerous right turn	→ 7	Are there elements that cause drivers turning right to misunderstand the behavior of oncoming traffic?	<b>→</b>														36-7							
	1	Did the intersection collision occur because a driver entered the intersection without confirming safety because the driver was unaware of the need to confirm safety?  Failure to confirm safety	→ 5	Are there elements that prevent awareness of the need to try to confirm safety, stop, then advance slowly?	<b>→</b>							29-5	30-5			33-5						40-5	41-5			
t collision	2	Did the intersection collision occur because a driver attempted to confirm safety, but entered the intersection without being able to do so?	→ 1	Are there elements that block the view of drivers?	<b>→</b>		24-1														38-1					44-1
ersection		Cannot see the vehicle	→ 2	Are there elements that distract drivers so they are not attentive?	<b>-</b>				26-2				30-2			33-2						40-2	41-2		43-2	
Inter	3	Did the intersection collision occur because a driver tried to confirm safety and decided it was safe to proceed?  Cannot stop	→ 4	Are there elements that encourage drivers to move forward, start to move, or to cut in dangerously?	<b>→</b>												34-4	35-4								
eft turn	1	Did this collision occur because the driver turned left without predicting a vehicle ahead?  Abruptly turning left	→ 6	Are there elements that encourage abrupt left turning?	<b>→</b>							29-6														
During a left turn	2	Did the collision occur while the driver turned left after checking for safety but without confirming safety?  Cannot see the vehicle	→ 2	Are there elements that distract a driver so he is not attentive?	->																				43-2	

<sup>\*</sup> Accident process pattern No. 5 is an accident that occurs when a driver has made an emergency stop or lane change to avoid danger, and it is difficult to hypothesize causes of this type of accident. So for this countermeasure (Cause code O-15), refer to other types of accidents.

## Pattern (6) Intersection - signaled - 5 roads or more

		(b) Intersection – signated – 5 rodus of more													ad enviro	nments	that caus	e accid	ents							<u> </u>	•//
1		Accident process					Deede			Υ			factors				1 10							nment fa			
-	Т		<u> </u>		$\rightarrow$	1	Road a	ignmen 3	4	5	6	Inte	rsection 8		10	11	12 Lar	nes/wid	ın 14	15	16		essories 18	s/structu		21	22
Type of projdent	: I X	State of occurrence of accidents	CI	neck points of the road environment that causes accidents		Sharp curve before an intersection	ong steep downhill gradient	Orest	ong straight section before an	Corner cut-off with large radius	Corner cut-off with small radius	Acute angle intersection	Obtuse angle intersection	Complexiy shaped intersection	Drivers tend to drive fast in a large intersection	Long crossing distance for pedestrians and bicycles	Iwo or more right/left turn lanes	Narrow major road	Changing lane operation (through lane changes to a left or right turn lane)	A bicycle crossing zone at a location with a pedestrian crosswalk	Dark intersection where pedestrians and parked vehicles are difficult to see	tained trees n	tained etc. on the	nappropriately located traffic signs and oad surface indicators with unsuitable contents (unclear and complex)	structures	nd left turn nicles	Vehicles turning right or left leave the right and left turning lanes
	2	Did the rear-end collision occur because a driver did not check the car ahead on time?	<b>1</b>	Are there elements that obscure a driver's view of vehicles ahead?	<b>→</b>	1-1		3-1					-									17-1	18-1				
			2	Are there elements that distract a driver so he is not attentive?	->	ļ						ļ		9-2						15-2				19-2	<b></b>		
acicilloc bac	4	Did the rear-end collision occur because a driver checked for safety, made a judgment and took action, but avoided the other car too late?  Cannot stop	→ 14	Are there elements that encourage drivers to make frequent emergency stops, to decelerate, or to change lanes on the main road?	<b>→</b>						6-14	7-14		9-14					14-14					19-14		21-14	22-14
	5	Avoiding danger Avoiding danger	→ 15	Check for elements that cause accidents by drivers avoiding other danger.	<b>→</b>	1-15	2-15	3-15	4-15		6-15	7-15		9-15					14-15	15-15		17-15	18-15	19-15	20-15	21-15	22-15
		Did the right turn collision occur because a driver attempted to confirm safety, but turned right without succeeding in confirming safety?	→ 1	Are there elements that obscure the view of the road ahead of drivers turning right?		1-1		3-1								,						17-1			20-1		
	2	Cannot see the vehicle	→ 2	Are there elements that distract drivers turning right so they are not attentive?	<b>→</b>									9-2										19-2			
		Did the right turn collision occur because a driver tried to confirm safety, decided that it was possible to turn right, and tried to turn right?  Dangerous through travel	→ 4	Are there elements that encourage dangerous right turns?	<b>→</b>							,														21-4	
	3	Dangerous right turn	→ 7	Are there elements that cause drivers turning right to misunderstand the behavior of oncoming traffic?	<b>→</b>		2-7		4-7											<u> </u>							
	1	Did the intersection collision occur because a driver entered the intersection without confirming safety because the driver was unaware of the need to confirm safety?  Failure to confirm safety	→ 5	Are there elements that prevent awareness of the need to try to confirm safety, stop, then advance slowly?	<b>→</b>				4-5															19-5			
	Collision	without being able to do so?	→ 1	Are there elements that block the view of drivers?	<b>→</b>	1-1		3-1			7-1											17-1	18-1		20-1		
		Cannot see the vehicle  Cannot see the vehicle	→ 2	Are there elements that distract drivers so they are not attentive?	<b>→</b>									9-2										19-2			
	3	Did the intersection collision occur because a driver tried to confirm safety and decided it was safe to proceed?  Cannot stop	→ 4	Are there elements that encourage drivers to move forward, start to move, or to cut in dangerously?	<b>→</b>																						

<sup>\*</sup> Accident process pattern No. 5 is an accident that occurs when a driver has made an emergency stop or lane change to avoid danger, and it is difficult to hypothesize causes of this type of accident. So for this countermeasure (Cause code O-15), refer to other types of accidents.

<sup>\*</sup> Although causes of accidents are recorded for road environments that cause accidents, there are cases where the columns below them are all empty columns. This has been done so that the contents can be expanded by accumulating future data and obtaining the views of use; so this manual.

		Assidant present				$\neg$									Road en		nts that o	~									-/ <u>-/</u>
		Accident process				Ī	Accessories/ structure			Roads	ide envi	ronment			Road s	urface			Signals			Congestion/ stopping			Others		
						-	23	24	25	26	27	28	29	30	31 \	32	33	34	35	36	37	38	40	41	42	43	44
Type of accident	Accident process pattern No.	State of occurrence of accidents		Chec	k points of the road environment that causes accidents		Oncoming right turn vehicles stopping at inappropriate locations	Obstructions to vision on the road sides (buildings, walls, etc.)	Rows of bright structures lining the roadway	Facilities that distract drivers	Heavily used roadside facility driveway exit/entrance or narrow street	Unclear roadside facility driveway exit/entrance or narrow street	Driveways of facilities along the roadside entering the intersection	Visibility reduced by sunlight in the morning and in the west	Deteriorated road surface paving (ruts and cracks)	Poor drainage	Poorly located signals that are difficult to see	Short time available for forward movement	Short clearance time	Signal phase operation that is difficult to understand (complex, time differences)	Deceleration and stopping of right and left turn vehicles on main road	Congested main road	Adjoining intersections	A railway crossing adjoining the intersection	No crossing facilities at a location they are needed	Motorcycles and cyclists weaving through traffic	On-street parking and stopped busses obstructing traffic movement
	2	Did the rear-end collision occur because a driver did not check the car ahead on time?	<b>→</b>	1	Are there elements that obscure a driver's view of vehicles ahead?	<b>→</b>		24-1				ļ															
		Noticed too late	<b>→</b>	2	Are there elements that distract a driver so he is not attentive?	<b>→</b>								30-2			33-2					****	40-2	41-2			
ar-end collision	4	Did the rear-end collision occur because a driver checked for safety, made a judgment and took action, but avoided the other car too late?  Cannot stop	<b>→</b>	14	Are there elements that encourage drivers o make frequent emergency stops, to decelerate, or to change lanes on the main oad?	<b>→</b>				26-14			29-14		31-14	32-14							40-14	41-14			44-14
Reg		Did the rear-end collision occur because a driver abruptly stopped or changed lanes in order to avoid danger?			Check for elements that cause accidents by drivers avoiding other danger.																						
	5	Avoiding danger  Avoiding danger  Avoiding danger	<b>→</b>	15		<b>→</b>	23-15	24-15		26-15			29-15	30-15	31-15	32-15	33-15	34-15	35-15	36-15		38-15	40-15	41-15	42-15	43-15	44-15
		Did the right turn collision occur because a driver attempted to confirm safety, but turned right without succeeding in confirming safety?	<b>→</b>		Are there elements that obscure the view of the road ahead of drivers turning right?	→	23-1										33-1					38-1					
t turn	2	Cannot see the vehicle	<b>→</b>		Are there elements that distract drivers turning right so they are not attentive?	<b>→</b>				26-2					1		-								42-2	43-2	
During right		Did the right turn collision occur because a driver tried to confirm safety, decided that it was possible to turn right, and tried to turn right?  Dangerous through travel	<b>→</b>		Are there elements that encourage dangerous right turns?	<b>→</b>												34-4									
	3	Dangerous right turn	<b>→</b>		Are there elements that cause drivers turning right to misunderstand the behavior of oncoming traffic?	<b>→</b>														36-7							
	1	Did the intersection collision occur because a driver entered the intersection without confirming safety because the driver was unaware of the need to confirm safety?  Failure to confirm safety	<b>→</b>		Are there elements that prevent awareness of the need to try to confirm safety, stop, then advance slowly?	<b>→</b>					i		29-5	30-5			33-5						40-5	41-5			
n collision	2	Did the intersection collision occur because a driver attempted to confirm safety, but entered the intersection without being able to do so?  Cannot see the vehicle	<b>→</b>	1	Are there elements that block the view of drivers?	<b>→</b>		24-1														38-1					44-1
Intersection co	-	Cannot see the vehicle	<b>→</b>		Are there elements that distract drivers so they are not attentive?	<b>→</b>				26-2				30-2			33-2						40-2	41-2		43-2	
=	3	Did the intersection collision occur because a driver tried to confirm safety and decided it was safe to proceed?  Cannot stop	->		Are there elements that encourage drivers to move forward, start to move, or to cut in dangerously?	<b>→</b>												34-4	35-4								

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		Accident process			F						Boad	factors	oad envi	onment	ts that ca	ause ac	cidents			raffic on	vironmo	nt factors		
		Accident process						d alignn				ion shape			anes/wid					Access	ories/str		<u></u>	
	No.					1	2	3	4	5	6	7	8	9	10 aud	th lane (e)	12 Logis	ians, ent are	lo pell	15 səə.	16 S S	17	18 with	19
Type of accident	Accident process pattern	State of occurrence of accidents	Ch	eck points of the road environment that causes accidents		Sharp curve	Long steep downhill gradient	Crest	Long straight section	Reverse cant	Corner cut-off with large radius	Obtuse angle intersection	Narrow lanes	Sudden decline of the number a width of lanes	Complex change of the number width of lanes	Changing lane operation (through I changes to a left or right turn lane)	Slow vehicles traveling in a sect without a passing zone (lane)	Dark intersection where pedestriparked vehicles, and the alignm difficult to see	Optical guidance either not insta inadequate (nighttime)	Poorly located and maintained treetc. on the center median	Poorly located and maintained tre signboards, etc. on the sidewalks		Inappropriately located traffic sigunsuitable contents (unclear and complex)	Bridge piers and other structures
	1	Did the collision occur because the vehicle ahead unexpectedly stopped, decelerated, or changed lanes?  Dangerous stopping and decelerating	14	Are there elements that encourage drivers to make frequent emergency stops, to decelerate, or to change lanes on the main road?	<b>→</b>								8-14	9-14	10-14	11-14							18-14	
collision	2	Did the collision occur because of delayed awareness of the vehicle ahead?  Noticed too late	1	Are there any elements that block visibility?	→	1-1																		
Rear-end	4	Did the collision occur the driver tried to confirm safety, made a judgment, and took action, but could not control the vehicle?	8	Are there any elements that contribute to driver inability to control a vehicle?	→																			
	5	Did the collision occur because a driver abruptly stopped or changed lanes to avoid danger?  Avoiding danger	15	Check for elements that cause accidents by drivers avoiding other danger.	→	1-15	2-15		4-15	5-15			8-15	9-15	10-15	11-15	12-15	13-15	14-15				18-15	19-15
	1	Did the vehicle hit the pedestrian crossing the road at a place where the driver did not know that pedestrians cross the road?  Dangerous crossing	13	Are there elements that encourage pedestrians to cross roads dangerously.	<b>→</b>																			
ier crossing	2	Did the vehicle hit the pedestrian because the driver tried to confirm safety, but proceeded without being able to see the pedestrian?  Can neither see nor be seen	1	Are there any elements that block visibility?	<b>→</b>	1-1		3-1										13-1						19-1
₽	4	Did the vehicle hit the pedestrian because the driver tried to confirm safety, made a judgment, and took action, but could not control the vehicle?  Cannot stop	8	Are there any elements that contribute to driver inability to control a vehicle?	<b>→</b>																			
	2	Did the vehicle leave its lane colliding with an object, because it entered a curve or narrow road section at excessive speed without being able to confirm the alignment of the road ahead?	12	Are there any elements that make it difficult to understand the alignment?	→	1-12		3-12						9-12	10-12			13-12	14-12				18-12	
departure	4	Did the vehicle leave its lane colliding with an object because the driver tried to confirm safety, made a judgment, and took action, but could not control the vehicle?	8	Are there any elements that contribute to a driver's inability to control a vehicle?	→					5-8														
Lane	5	Did the collision occur because the vehicle shifted into the oncoming lane to avoid danger?  Dangerous vehicle  Pedestrian etc.	15	Are there any elements that cause danger avoidance type accidents?	<b>→</b>	1-15	2-15	3-15	4-15	5-15			8-15	9-15	10-15	11-15	12-15	13-15	14-15				18-15	19-15
		Did the head-on collision occur because a driver entered the curve at excessive speed without being able to check the alignment of the road ahead, straying into the oncoming lane without being able to confirm safety?  Entering the curve at high speed without confirming its alignment	12	Are there any elements that make it difficult to understand the alignment?	<b>→</b>	1-12		3-12										13-12	14-12				18-12	
	2	Did the head-on collision occur because a driver changed to the oncoming lane to pass a vehicle without being able to confirm safety from oncoming vehicles?  Did the head-on collision occur because a driver entered the oncoming lane when passing without being able to confirm safety?	10	Are there elements that make it difficult to confirm safety before moving into the oncoming lane to pass a vehicle?	→	1-10		3-10																
no collision		Passing without confirming safety	11	Are there any elements that encourage frequent passing in the oncoming lane?	<b>→</b>									,			12-11							
Head-c	3	Did the head-on collision occur a driver shifted to the oncoming lane after judging that it is possible to pass safely?  Judging that it is possible to pass	17	oncoming vehicles?	<b>→</b>		2-17		4-17															
	4	Did the head-on collision occur because a driver lost control of the vehicle, straying into the oncoming lane?  Cannot stop	8	Are there any elements that contribute to driver inability to control a vehicle?	<b>→</b>	7				5-8														ļ
	5	Did the head-on collision occur because a driver shifted into the oncoming lane to avoid danger?  Dangerous vehicle  Avoiding danger  Avoiding danger	15	Check for elements that cause accidents by drivers avoiding other danger.	<b>→</b>	1-15	2-15	3-15	4-15	5-15			8-15	9-15	10-15	11-15	12-15	13-15	14-15				18-15	19-1
t tum	2	Did the right turn collision occur because a driver attempted to confirm safety, but turned right without succeeding in confirming safety?  Cannot see the vehicle	, 1	Are there any elements that block visibility?	>	1-1		3-1																19-1
During right	3	ngnt?	+ 4	Are there elements that encourage drivers to drive dangerously or start up, and aggressively cut in.  Are there elements that encourage misunderstanding of the	<b>→</b>														-				<del></del>	ļ
L°		Judging it is safe to turn right	<b>,</b> 7	Are there elements that encourage misunderstanding of the behavior of oncoming vehicles.	<b>→</b>		2-7		4-7										<u></u>			لــــا	<u> </u>	

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		Accident process								·				F			ents tha		accidents ors						
	т		1			-	20	21	Roads 22	side en 23			5	27	Roa 28	d surfac	ce cond	litions 31	Congestio 34	on/stopping 35	37	40	Others 41	42	43
Type of accident	Accident process pattern No.	State of occurrence of accidents		Check po	oints of the road environment that causes accidents		Obstructions to vision on the road sides (buildings, walls, etc.)	Rows of bright structures lining the roadway	Facilities that distract drivers	Heavily used roadside facility driveway	streets warrow streets	roadside facility driveway		Visibility reduced by sunlight in the morning and in the west	Deteriorated road surface paving (ruts and cracks)	Poor drainage	Deposited mud or sand	Road surface icing	Vehicles preparing to turn right or left stopping or decelerating on the main troad	Congested main road	Heavy traffic on the main road	Many pedestrians or cyclists on and around the sidewalks and shoulders	tion they	ng through vehicle	On-street parking and stopped busses bostructing traffic movement
	1	Did the collision occur because the vehicle ahead unexpectedly stopped, decelerated, or changed lanes?  Dangerous stopping and decelerating and deceleration an	→ 1	Are t emer main	there elements that encourage drivers to make frequent ergency stops, to decelerate, or to change lanes on the n road?	<b>→</b>			22-14	23-1	4 24-	14 25	15						34-14	35-14					43-14
ollision	2	Did the collision occur because of delayed awareness of the vehicle ahead?  Noticed too late	<b>→</b> 1	Are t	there any elements that block visibility?	<b>→</b>	20-1							27-1											
Rear-end o	4	Did the collision occur the driver tried to confirm safety, made a judgment, and took action, but could not control the vehicle?	→ {		there any elements that contribute to driver inability to trol a vehicle?	<b>→</b>									28-8	29-8	30-8	31-8							
	5	Did the collision occur because a driver abruptly stopped or changed lanes to avoid danger?  Dangerous vehicle Avoiding danger	→ 1		eck for elements that cause accidents by drivers avoiding or danger.	<b>→</b>	20-15	21-15	22-15	23-1	5 24-	15 25	-15 2	?7-15	28-15	29-15	30-15	31-15	34-15	35-15	37-15		41-15	4	43-15
	1	Did the vehicle hit the pedestrian crossing the road at a place where the driver did not know that pedestrians cross the road?  Dangerous crossing	<b>→</b> 1		there elements that encourage pedestrians to cross ds dangerously.	<b>→</b>										-				35-13			41-13	,	43-13
r crossing	2	Did the vehicle hit the pedestrian because the driver tried to confirm safety, but proceeded without being able to see the pedestrian?  Can neither see nor be seen	<b>→</b>	Are 1	there any elements that block visibility?	<b>→</b>	20-1	21-1			i			27-1						35-1					43-1
Ö	4	Did the vehicle hit the pedestrian because the driver tried to confirm safety, made a judgment, and took action, but could not control the vehicle?	→   1		there any elements that contribute to driver inability to trol a vehicle?	<b>→</b>									28-8	29-8	30-8	31-8							
	2	Did the vehicle leave its lane colliding with an object, because it entered a curve or narrow road section at excessive speed without being able to confirm the alignment of the road ahead?  Delayed awareness of the alignment	→ 1		there any elements that make it difficult to understand the nment?	<b>→</b>																			
e departur	4	Did the vehicle leave its lane colliding with an object because the driver tried to confirm safety, made a judgment, and took action, but could not control the vehicle?	<b>→</b>	8 cont	there any elements that contribute to a driver's inability to trol a vehicle?	<b>→</b>									28-8	29-8	30-8	31-8							
Lan	5	Did the collision occur because the vehicle shifted into the oncoming lane to avoid danger?  Dangerous vehicle  Pedestrian etc.	→ 1	15 acci	there any elements that cause danger avoidance type idents?	<b>→</b>	20-15	21-15	22-15	23-1	5 24	-15 25	-15	27-15	28-15	29-15	30-15	31-1	34-15	35-15	37-15		41-15		43-15
		Did the head-on collision occur because a driver entered the curve at excessive speed without being able to check the alignment of the road ahead, straying into the oncoming lane without being able to confirm safety?  Entering the curve at high speed without confirming its alignment	→ 1		there any elements that make it difficult to understand the inment?	<b>→</b>			-				į												
	2	Did the head-on collision occur because a driver changed to the oncoming lane to pass a vehicle without being able to confirm safety from oncoming vehicles?  Did the head-on collision occur because a driver entered the oncoming lane when passing without being able to confirm safety?	<b>→</b>		e there elements that make it difficult to confirm safety fore moving into the oncoming lane to pass a vehicle?	<b>→</b>	20-10																		
n collision		Passing without confirming safety	<b>→</b>	11 the	e there any elements that encourage frequent passing in oncoming lane?	<b>→</b>								<u>.</u>											43-11
Head-c	3	Did the head-on collision occur a driver shifted to the oncoming lane after judging that it is possible to pass safely?  Judging that it is possible to pass	<b>→</b>	17 dan onc	e there any elements that encourage drivers to pass ngerously when it is easy to misunderstand the behavior of coming vehicles?	<b>→</b>																		-	
	4	Cannot stop	→	8 con	e there any elements that contribute to driver inability to ntrol a vehicle?	<b>→</b>									28-8	29-8	30-8	31-1	3					<del>-</del>	
	5	Did the head-on collision occur because a driver shifted into the oncoming lane to avoid danger?  Avoiding danger  Avoiding danger  Avoiding danger	<b>→</b>	15 othe	eck for elements that cause accidents by drivers avoiding er danger.	<b>→</b>	20-15	21-1	5 22-1	5 23-	15 24	-15 2	5-15	27-15	28-15	29-15	30-1	5 31-1	5 34-15	35-15	37-15		41-15		43-15
ttum	2	Cannot see the vehicle	<b>→</b>	1	e there any elements that block visibility?	<b>→</b>								27-1						35-1					<u> </u>
Juring right	3	ngin:	<b>→</b>	4 dar	e there elements that encourage drivers to drive ingerously or start up, and aggressively cut in.  e there elements that encourage misunderstanding of the				-		.						-	-	34-4		37-4	-			
		Judging it is safe to turn right	→	7 bet	havior of oncoming vehicles.	<b>→</b>									<u> </u>	<u> </u>				_					'

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		Accident process								-	Road	factors	oad envi	ronmen	ts that c	ause ac	cidents			raffic en	vironme	nt factor		1/2)
		Acqueit process						d alignn	nent			tion shape		<del> </del>	anes/wi					Access	ories/str	uctures	<u> </u>	
						1	2	3	4	5	6	7	8	9	10		12	13	14	15	16	17	18 =	19
Type of accident	Accident process pattern No.	State of occurrence of accidents	CH	eck points of the road environment that causes accidents	3	Sharp curve	Long steep downhill gradient	Crest	Long straight section	Reverse cant	Corner cut-off with large radius	Obtuse angle intersection	Narrow lanes	Sudden decline of the number and width of lanes	Complex change of the number and width of lanes	Changing lane operation (through lane changes to a left or right turn lane)	Slow vehicles traveling in a section without a passing zone (lane)	Dark intersection where pedestrians, parked vehicles, and the alignment are difficult to see	<u>a</u> e	Poorly located and maintained trees etc. on the center median	Poorly located and maintained trees, signboards, etc. on the sidewalks	Negligently cut center median	Inappropriately located traffic signs with unsultable contents (unclear and complex)	Bridge piers and other structures
	1	Did the collision occur because the vehicle ahead unexpectedly stopped, decelerated, or changed lanes?  Dangerous stopping and decelerating  Lane change	14	Are there elements that encourage drivers to make frequent emergency stops, to decelerate, or to change lanes on the main road?	<b>→</b>								8-14	9-14	10-14	11-14							18-14	
collision	2	Did the collision occur because of delayed awareness of the vehicle ahead?	1	Are there any elements that block visibility?	→	1-1						_									16-1			
ar-end o	4	Did the collision occur the driver tried to confirm safety, made a judgment, and took action, but could not control the vehicle?	8	Are there any elements that contribute to driver inability to control a vehicle?	<b>→</b>																			
, B	5	Did the collision occur because a driver abruptly stopped or changed lanes to avoid danger?  Avoiding danger  Avoiding danger	15	Check for elements that cause accidents by drivers avoiding other danger.	<b>→</b>	1-15	2-15	3-15	4-15	5-15			8-15	9-15	10-15	11-15		13-15	14-15		16-15		18-15	19-15
	1	Did the vehicle hit the pedestrian crossing the road at a place where the driver did not know that pedestrians cross the road?  Dangerous crossing	· 13	Are there elements that encourage pedestrians to cross roads dangerously.	<b>→</b>			,									·							
ner crossing	2	Did the vehicle hit the pedestrian because the driver tried to confirm safety, but proceeded without being able to see the pedestrian?  Can neither see nor be seen	1	Are there any elements that block visibility?	<b>→</b>	1-1		3-1	,									13-1						19-1
ð	4	Did the vehicle hit the pedestrian because the driver tried to confirm safety, made a judgment, and took action, but could not control the vehicle?	8	Are there any elements that contribute to driver inability to control a vehicle?	<b>→</b>												1							
E	2	Did the right turn collision occur because a driver attempted to confirm safety, but turned right without succeeding in confirming safety?	• 1	Are there any elements that block visibility?	<b>→</b>	1-1		3-1																19-1
ring right	3	and tried to turn right?	<b>4</b>	Are there elements that encourage drivers to drive dangerously or start up, and aggressively cut in.  Are there elements that encourage	<b>→</b>																			
3		Judging it is safe to turn right	→ 7	misunderstanding of the behavior of oncoming vehicles.	<b>→</b>		2-7		4-7															
	2	Did the vehicle leave its lane colliding with an object, because it entered a curve or narrow road section at excessive speed without being able to confirm the alignment of the road ahead?  Delayed awareness of the alignment	→ 12	Are there any elements that make it difficult to understand the alignment?	>	1-12		3-12						9-12	10-12			13-12	14-12				18-12	
ne departure	4	Did the vehicle leave its lane colliding with an object because the driver tried to confirm safety, made a judgment, and took action, but could not control the vehicle?	→ 8	Are there any elements that contribute to a driver's inability to control a vehicle?	<b>→</b>					5-8													-	l
<b>P</b>	5	Did the collision occur because the vehicle shifted into the oncoming lane to avoid danger?    Dangerous vehicle	→ 15	Are there any elements that cause danger avoidance type accidents?	<b>→</b>	1-15	2-15	3-15	4-15	5-15			8-15	9-15	10-15	11-15	5	13-15	14-15		16-15		18-15	19-
a left turn	1	Sudden left turn	→ 18		<b>→</b>																		18-18	
During a	2	Did the collision occur while the driver turned left after checking for safety but without confirming safety?  Cannot see the vehicle	→ 2	Are there elements that district drivers, making then inattentive?	<b>→</b>																			

<sup>\*</sup> Accident process pattern No. 5 is an accident that occurs when a driver has made an emergency stop or lane change to avoid danger, and it is difficult to hypothesize causes of this type of accident. So for this countermeasure (Cause code O-15), refer to other types of

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		Accident process							<u> </u>		duar			1	raffic er	vironme	ent factor		n/otone:==	1		Others		
<del></del> -			Т-			-	20	21	Roads 22	ide env	ironmen 24	t 25	27	28	ad surfa	ce condi		Congestic 34	n/stopping 35	37	40	Others 41	42	43
Type of accident	Accident process pattern No.	State of occurrence of accidents		Chec	ck points of the road environment that causes accidents		Obstructions to vision on the road sides (buildings, walls, etc.)	Rows of bright structures lining the roadway	Facilities that distract drivers	Heavily used roadside facility driveway exit/entrance	Heavily used narrow streets	Unclear roadside facility driveway exit/entrance or narrow street	Visibility reduced by sunlight in the morning and in the west	Deteriorated road surface paving (ruts and cracks)	Poor drainage	Deposited mud or sand	Road surface icing	Vehicles preparing to turn right or left stopping or decelerating on the main road	Congested main road	Heavy traffic on the main road	Many pedestrians or cyclists on and around the sidewalks and shoulders	No crossing facilities at a location they are needed	Motorcycles weaving through vehicle traffic	On-street parking and stopped busses obstructing traffic movement
	1	Did the collision occur because the vehicle ahead unexpectedly stopped, decelerated, or changed lanes?  Dangerous stopping and decelerating  Lane change	<b>→</b>	14	Are there elements that encourage drivers to make frequent emergency stops, to decelerate, or to change lanes on the main road?	<b>→</b>			22-14	23-14	24-14	25-14						34-14	35-14					43-14
collision	2	Did the collision occur because of delayed awareness	→	1	Are there any elements that block visibility?	<b>→</b>	20-1				ļ <u>-</u>		27-1											_
ar-end	4	Cannot stop	<b>→</b>		Are there any elements that contribute to driver inability to control a vehicle?	<b>→</b>								28-8	29-8	30-8	31-8							
ă	5	Did the collision occur because a driver abruptly stopped or changed lanes to avoid danger?  Avoiding danger  Dangerous vehicle	<b>→</b>	15	Check for elements that cause accidents by drivers avoiding other danger.	<b>→</b>	20-15	21-15	22-15	23-15	24-15	25-15	27-15	28-15	29-15	30-15	31-15	34-15	35-15	37-15		41-15	42-15	43-15
	1	Did the vehicle hit the pedestrian crossing the road at a place where the driver did not know that pedestrians cross the road?	<b>→</b>	13	Are there elements that encourage pedestrians to cross roads dangerously.	<b>→</b>													35-13			41-13		43-13
er crossing	2	Did the vehicle hit the pedestrian because the driver tried to confirm safety, but proceeded without being able to see the pedestrian?  Can neither see nor be seen	<b>→</b>	1	Are there any elements that block visibility?	<b>→</b>	20-1	21-1					27-1						35-1					43-1
độ (	4	Did the vehicle hit the pedestrian because the driver tried to confirm safety, made a judgment, and took action, but could not control the vehicle?		8	Are there any elements that contribute to driver inability to control a vehicle?	<b>→</b>								28-8	29-8	30-8	31-8							
turn	2	Did the right turn collision occur because a driver attempted to confirm safety, but turned right without succeeding in confirming safety?	<b>→</b>	1	Are there any elements that block visibility?	<b>→</b>							27-1						35-1					
g right		Did the right turn collision occur because a driver tried to confirm safety, decided that it was possible to turn right, and tried to turn right?	<b>→</b>	4	Are there elements that encourage drivers to drive dangerously or start up, and aggressively cut in.	-												34-4		37-4				
During	3	Judging it is safe to turn right	→	7	Are there elements that encourage misunderstanding of the behavior of oncoming vehicles.	→																		
	2	Did the vehicle leave its lane colliding with an object, because it entered a curve or narrow road section at excessive speed without being able to confirm the alignment of the road ahead?	<b>-</b>	12	Are there any elements that make it difficult to understand the alignment?	<b>-</b>																		
departure	4	Did the vehicle leave its lane colliding with an object because the driver tried to confirm safety, made a judgment, and took action, but could not control the vehicle?	<b>-</b>	8	Are there any elements that contribute to a driver's inability to control a vehicle?	     →								28-8	29-8	30-8	31-8							
Laned		Did the collision occur because the vehicle shifted into the oncoming lane to avoid danger?			Are there any elements that cause danger avoidance type accidents?	ļ															-			
	5	Dangerous vehicle Pedestrian etc.	→	15		<b>→</b>	20-15	21-1	5 22-1	5 23-1	5 24-1	5 25-1	5 27-1	28-15	29-15	30-15	31-15	34-15	35-15	37-15		41-15	42-15	43-
left turn	1	Did this collision occur because the driver turned left without predicting a vehicle ahead?	<b>→</b>	18	Are there elements that encourage abrupt left turns on the main road?	-						25-1	3											
During a le	2	Did the collision occur while the driver turned left after checking for safety but without confirming safety?	<b>→</b>	2	Are there elements that district drivers, making then inattentive?	<b> </b>																	42-2	

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	-											R	oad env	ironmen	ts that c	ause ac	cidents						(1,-/
		Accident process			$\vdash$			<del></del>			Road								7			nt factors	
	<u> </u>		_		-			d alignn		-	Intersecti	<del></del>			anes/wi		1				sories/str		
Type of accident	Accident process pattern No.	State of occurrence of accidents	CI	neck points of the road environment that causes accidents		Sharp curve	Long steep downhill gradient	α Crest	Long straight section	Reverse cant	Corner cut-off with large radius on	Obtuse angle intersection 4	Varrow lanes 88	Sudden decline of the number and $\omega$	Complex change of the number and width of lanes	Changing lane operation (through lane changes to a left or right turn lane)	Slow vehicles traveling in a section without a passing zone (lane)	Dark intersection where pedestrians, parked vehicles, and the alignment are difficult to see	Optical guidance either not installed or nadequate (nighttime)	Poorly located and maintained trees	Poorly located and maintained trees, aignboards, etc. on the sidewalks	Vegligently cut center median appropriately located traffic signs with musuitable contents (unclear and	
	1	Did the collision occur because the vehicle ahead unexpectedly stopped, decelerated, or changed lanes?  Dangerous stopping and decelerating  Lane change	→ 14	Are there elements that encourage drivers to make frequent emergency stops, to decelerate, or to change lanes on the main road? →									8-14	9-14	10-14	11-14						18-1	4
d collision	2	Did the collision occur because of delayed awareness of the vehicle ahead?  Noticed too late	→ 1	Are there any elements that block visibility?  →	1	1-1																	
Rear-end	4	Did the collision occur the driver tried to confirm safety, made a judgment, and took action, but could not control the vehicle?	→ 8	Are there any elements that contribute to driver inability to control a vehicle?																			
	5	Did the collision occur because a driver abruptly stopped or changed lanes to avoid danger?  Dangerous vehicle Avoiding danger	→ 15	Check for elements that cause accidents by drivers avoiding other danger. →	1	-15	2-15	3-15	4-15				8-15	9-15	10-15	11-15					16-15	18-1	5 19-15
turn	2	Did the right turn collision occur because a driver attempted to confirm safety, but turned right without succeeding in confirming safety?	→ 1	Are there any elements that block visibility?  →	1	1-1		3-1															19-1
During right	3	Did the right turn collision occur because a driver tried to confirm safety, decided that it was possible to turn right, and tried to turn right?  Judging it is safe	→ 4	Are there elements that encourage drivers to drive dangerously or start up, and aggressively cut in. →	•																		
۵		to turn right	→ 7	Are there elements that encourage misunderstanding of the behavior of oncoming vehicles.			2-7		4-7			1											
lision	2	Did the intersection collision occur because a driver attempted to confirm safety, but entered the intersection without being able to do so?  Cannot see the vehicle  Cannot see the vehicle	→ 1	Are there any elements that block visibility?  →	, 1	1-1		3-1													16-1		19-1
ersection collisi	3	Cannot stop	→ 4	Are there elements that encourage drivers to drive dangerously or start up, and aggressively cut in.	•							-											
Inter	4	Did the rear-end collision occur because a driver checked for safety, made a judgment and took action, but avoided the other car too late?  Cannot stop	→ 8	Are there any elements that contribute to driver inability to control a vehicle?  →	•		-																

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Pattern (9) Uninterrupted flow section – city – multiple lanes – no center median

		Accident process		,										···		cause a	accidents					
		, 100 Marin process			ļ			Roadsi	de envi	ronmen				d surfac			Congestio	n/etopping			Others	
	1		1			20	21		23			27	28		30		34	35	37	40		42 43
Type of accident	Accident process pattern No.	State of occurrence of accidents	C	neck points of the road environment that causes accidents		Obstructions to vision on the road sides (buildings, walls, etc.)	Rows of bright structures lining the roadway	Facilities that distract drivers	Heavily used roadside facility driveway exit/entrance	Heavily used narrow streets	Unclear roadside facility driveway exit/entrance or narrow street	Visibility reduced by sunlight in the morning and in the west	Deteriorated road surface paving (ruts and cracks)	Poor drainage	Deposited mud or sand	Road surface icing	Vehicles preparing to turn right or left stopping or decelerating on the main froad	Congested main road	Heavy traffic on the main road	rians or cyclists on and dewalks and shoulders	facilities at a location they	stopped busses
	1	Did the collision occur because the vehicle ahead unexpectedly stopped, decelerated, or changed lanes?  Dangerous stopping and decelerating  Lane change	→ 14	Are there elements that encourage drivers to make frequent emergency stops, to decelerate, or to change lanes on the main road?	->			22-14	23-14	24-14	25-14						34-14	35-14				43-14
d collision	2	Did the collision occur because of delayed awareness of the vehicle ahead?	→ 1	Are there any elements that block visibility?		20-1						27-1										
Rear-end	4	Did the collision occur the driver tried to confirm safety, made a judgment, and took action, but could not control the vehicle?	→ 8	Are there any elements that contribute to driver inability to control a vehicle?	<b>→</b>								28-8	29-8	30-8	31-8						
	5	Did the collision occur because a driver abruptly stopped or changed lanes to avoid danger?  Avoiding danger	→ 15	Check for elements that cause accidents by drivers avoiding other danger.	<b>→</b>	20-15	:	22-15	23-15	24-15	25-15	27-15	28-15	29-15	30-15	31-15	34-15	35-15	37-15			43-15
turn	2	without succeeding in confirming safety?  Cannot see the vehicle	→ 1	Are there any elements that block visibility?	<b>→</b>							27-1						35-1				
During right turn	3	o turn right, and tried to turn right?	→ 4	Are there elements that encourage drivers to drive dangerously or start up, and aggressively cut in.	→												34-4		37-4			
۵			7	Are there elements that encourage misunderstanding of the behavior of oncoming vehicles.	<b>→</b>																	
collision	2	Did the intersection collision occur because a driver attempted to confirm safety, but entered the intersection without being able to do so?  Cannot see the vehicle  Cannot see the vehicle	→ 1	Are there any elements that block visibility?	<b>→</b>	20-1						27-1										43-1
Intersection coll	3 .	Did the intersection collision occur because a driver ried to confirm safety and decided it was safe to proceed?  Cannot stop	→ 4	Are there elements that encourage drivers to drive dangerously or start up, and aggressively cut in.	<b>→</b>														37-4			
<u>**</u>	4	Did the rear-end collision occur because a driver checked for safety, made a judgment and took action, but avoided the other car too late?  Cannot stop	→ 8	Are there any elements that contribute to driver inability to control a vehicle?	<b>→</b>								28-8	29-8	30-8	31-8						

<sup>\*</sup> Accident process pattern No. 5 is an accident that occurs when a driver has made an emergency stop or lane change to avoid danger, and it is difficult to hypothesize causes of this type of accident. So for this countermeasure (Cause code O-15), refer to other types of accidents.

		Accident process	-		F						Road		ad envi	ronment	ts that c	ause ac	cidents	<u> </u>	Ten	ffic on	vironmer	at facts		
		Accident process		•	$\vdash$		Roa	d alignm	nent			on shape	<del>                                     </del>	نا	anes/wi	dth					ories/stru		S	
					T	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
Type of accident	Accident process pattern No.	State of occurrence of accidents	Ch	eck points of the road environment that causes accidents		Sharp curve	Long steep downhill gradient	Crest	Long straight section	Reverse cant	Corner cut-off with large radius	Obtuse angle intersection	Narrow lanes	Sudden decline of the number and width of lanes	Complex change of the number and width of lanes	Changing lane operation (through lane changes to a left or right turn lane)	Slow vehicles traveling in a section without a passing zone (lane)		Optical guidance either not installed or inadequate (nighttime)	Poorly located and maintained trees etc. on the center median	Poorly located and maintained trees, signboards, etc. on the sidewalks	Negligently cut center median	Inappropriately located traffic signs with unsuitable contents (unclear and complex)	Bridge piers and other structures
	1	Did the collision occur because the vehicle ahead unexpectedly stopped, decelerated, or changed lanes?  Dangerous stopping and decelerating  Lane change	14	Are there elements that encourage drivers to make frequent emergency stops, to decelerate, or to change lanes on the main road?  →									8-14	9-14	10-14	11-14						17-14	18-14	
collision		Did the collision occur because of delayed awareness of the vehicle ahead?	1	Are there any elements that block visibility?  →	$\cdot \left[                                   $	1-1														15-1	16-1			
Rear-end c	4	Did the collision occur the driver tried to confirm safety, made a judgment, and took action, but could not control the vehicle?	8	Are there any elements that contribute to driver inability to control a vehicle?  →	•																			
	5	Did the collision occur because a driver abruptly stopped or changed lanes to avoid danger?  Avoiding danger  Dangerous vehicle	15	Check for elements that cause accidents by drivers avoiding other danger.  →		1-15	2-15	3-15	4-15				8-15	9-15	10-15	11-15			1	15-15	16-15	17-15	18-15	19-15
r turn	2	Did the right turn collision occur because a driver attempted to confirm safety, but turned right without succeeding in confirming safety?	1	Are there any elements that block visibility?  →		1-1		3-1				-								15-1				19-1
During right to	3	Did the right turn collision occur because a driver tried to confirm safety, decided that it was possible to turn right, and tried to turn right?	4	Are there elements that encourage drivers to drive dangerously or start up, and aggressively cut in. →																				
مَّ	J	o turn ngnt →	7	Are there elements that encourage misunderstanding of the behavior of oncoming vehicles.	•		2-7		4-7															
ging course	5	Did the collision occur because a driver changed lanes without time to confirm safety?  → Passing without confirming safety	14	Are there elements that encourage drivers to make frequent emergency stops, to decelerate, or to change lanes on the main road?	•	19																	18-14	
When changi	3	Did the vehicle hit the pedestrian, because it left its lane to avoid danger?  Dangerous vehicle Avoiding danger  Avoiding danger	15	Check for elements that cause accidents by drivers avoiding other danger.  →	•	1-15	2-15	3-15	4-15				8-15	9-15	10-15	11-15			1	15-15	16-15	17-15	18-15	19-15
sion	2	Did the intersection collision occur because a driver attempted to confirm safety, but entered the intersection without being able to do so?  Cannot see the vehicle  Cannot see the vehicle	1	Are there any elements that block visibility?  →	•	1-1		3-1												15-1	16-1			19-1
ersection collision	3	Did the intersection collision occur because a driver tried to confirm safety and decided it was safe to proceed?  Cannot stop	4	Are there elements that encourage drivers to drive dangerously or start up, and aggressively cut in. →	•							-												
Inte	4	Did the rear-end collision occur because a driver checked for safety, made a judgment and took action, but avoided the other car too late?  Cannot stop	8	Are there any elements that contribute to driver inability to control a vehicle?	•																			

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<sup>\*</sup> Although causes of accidents are recorded for road environments that cause accidents, there are cases where the columns below them are all empty columns. This has been done so that the contents can be expanded by accumulating future data and obtaining the views of users of this manual.

		Accident process				-	<u> </u>									at cause nent fact	accidents					
		· · · · · · · · · · · · · · · · · · ·						Roads	ide envi	ronmen	t				ace cond			on/stopping	Ι"		Others	
			$\neg$	,		20	21	22	23	24	25	27	28	29	30	31	34	35	37	40		42
Type of accident	Accident process pattern No.	State of occurrence of accidents		Check points of the road environment that causes accident	s	Obstructions to vision on the road sides (buildings, walls, etc.)	Rows of bright structures lining the oadway	acilities that distract drivers	Heavily used roadside facility driveway exit/entrance	leavily used narrow streets	Inclear roadside facility driveway exityentrance or narrow street	fisibility reduced by sunlight in the norning and in the west	Deteriorated road surface paving (ruts and cracks)	Poor drainage	Deposited mud or sand	toad surface icing	Phicles preparing to turn right or left topping or decelerating on the main oad	ongested main road	leavy traffic on the main road	Many pedestrians or cyclists on and around the sidewalks and shoulders	facilities at a loca	Motorcycles weaving through vehicle traffic
	1	Did the collision occur because the vehicle ahead unexpectedly stopped, decelerated, or changed lanes?  Dangerous stopping and decelerating  Lane change	<b>→</b>	Are there elements that encourage drivers to make frequent emergency stops, to decelerate, or to change lanes on the main road?	<b>→</b>			22-14		24-14	25-14						34-14	35-14		~ 0	2.6	43
collision	2	Did the collision occur because of delayed awareness of the vehicle ahead?	<b>→</b>	Are there any elements that block visibility?	<b>→</b>	20-1						27-1						·				
Rear-end o	4	Did the collision occur the driver tried to confirm safety, made a judgment, and took action, but could not control the vehicle?  Cannot stop	<b>→</b>	Are there any elements that contribute to driver inability to control a vehicle?	<b>→</b>								28-8	29-8	30-8	31-8						
	5	Did the collision occur because a driver abruptly stopped or changed lanes to avoid danger?  Dangerous vehicle  Avoiding danger	<b>→</b>	Check for elements that cause accidents by drivers avoiding other danger.	<b>→</b>	20-15		22-15	23-15	24-15	25-15	27-15	28-15	29-15	30-15	31-15	34-15	35-15	37-15			43
t turn	2	Did the right turn collision occur because a driver attempted to confirm safety, but turned right without succeeding in confirming safety?	<b>→</b>	Are there any elements that block visibility?	->							27-1						35-1				
ıring right		Did the right turn collision occur because a driver tried to confirm safety, decided that it was possible to turn right, and tried to turn right?	<b>→</b>	Are there elements that encourage drivers to drive dangerously or start up, and aggressively cut in.	-												34-4		37-4			
۵	3	Judging it is safe to turn right	<b>→</b>	7 Are there elements that encourage misunderstanding of the behavior of oncoming vehicles.	-																	
ging course	5	Did the collision occur because a driver changed lanes without time to confirm safety?  Passing without confirming safety	<b>→</b>	Are there elements that encourage drivers to make frequent emergency stops, to decelerate, or to change lanes on the main road?	<b>→</b>						25-14											
When chan	3	Did the vehicle hit the pedestrian, because it left its lane to avoid danger?  Dangerous vehicle Avoiding danger  Avoiding danger	→	Check for elements that cause accidents by drivers avoiding other danger.	<b>→</b>	20-15		22-15	23-15	24-15	25-15	27-15	28-15	29-15	5 30-15	31-15	34-15	35-15	37-15			43
Ilision	2	Did the intersection collision occur because a driver attempted to confirm safety, but entered the intersection without being able to do so?  Cannot see the vehicle  Cannot see the vehicle	<b>→</b>	Are there any elements that block visibility?	<b>→</b>	20-1						27-1										4
ersection co	3	Did the intersection collision occur because a driver tried to confirm safety and decided it was safe to proceed?  Cannot stop	->	Are there elements that encourage drivers to drive dangerously or start up, and aggressively cut in.	<b>→</b>														37-4			
Ħ	4	Did the rear-end collision occur because a driver checked for safety, made a judgment and took action, but avoided the other car too late?	<b>→</b>	Are there any elements that contribute to driver inability to control a vehicle?	<b>→</b>								28-8	29-8	30-8	31-8						

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		Accident process			-						Road	Re factors	oad envi	ronmen	ts that c	ause ac	cidents		7	raffic er	vironmer	t factore		1/2)
								d alignn		1	Intersec	tion shape			anes/wi		<b>~</b>			Access	ories/stru	ctures		
					F	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
Type of accident	Accident process pattern No.	State of occurrence of accidents	C	neck points of the road environment that causes accidents		Sharp curve	ong steep downhill gradient	Crest	ong straight section	Reverse cant	Corner cut-off with large radius	Obtuse angle intersection	Varrow lanes	Sudden decline of the number and width of lanes	Complex change of the number and width of lanes	Changing lane operation (through lane changes to a left or right turn lane)	Slow vehicles traveling in a section without a passing zone (lane)	Dark intersection where pedestrians, parked vehicles, and the alignment are ifficult to see	Optical guidance either not installed or nadequate (nighttime)	Poorly located and maintained trees	Poorly located and maintained trees, signboards, etc. on the sidewalks	Vegligently cut center median	nappropriately located transc signs with insuitable contents (unclear and complex)	3ridge piers and other structures
	1	Did the collision occur because the vehicle ahead unexpectedly stopped, decelerated, or changed lanes?  Dangerous stopping and decelerating  Lane change	→ 14	Are there elements that encourage drivers to make frequent emergency stops, to decelerate, or to change lanes on the main road?	<b>→</b>								8-14		10-14	11-14	5, 2		-		- W	1	18-14	
collision	2	Did the collision occur because of delayed awareness of the vehicle ahead?	→ 1	Are there any elements that block visibility?	>	1-1																		
ar-end	4	Did the collision occur the driver tried to confirm safety, made a judgment, and took action, but could not control the vehicle?	→ 8	Are there any elements that contribute to driver inability to control a vehicle?	→																			
ЭĞ	5	Did the collision occur because a driver abruptly stopped or changed lanes to avoid danger?  Avoiding danger  Dangerous vehicle	→ 15	Check for elements that cause accidents by drivers avoiding other danger.	<b>→</b>	1-15	2-15	3-15	4-15	5-15			8-15	9-15	10-15	11-15	12-15	13-15	14-15			1	8-15	19-15
0	2	Did the vehicle leave its lane colliding with an object, because it entered a curve or narrow road section at excessive speed without being able to confirm the alignment of the road ahead?	→ 12	Are there any elements that make it difficult to understand the alignment?	<b>→</b>	1-12		3-12						9-12	10-12			13-12	14-12			1	8-12	
e departur	4	Did the vehicle leave its lane colliding with an object because the driver tried to confirm safety, made a judgment, and took action, but could not control the vehicle?	→ 8	Are there any elements that contribute to a driver's inability to control a vehicle?	<b>→</b>					5-8														
Lane	5	Did the collision occur because the vehicle shifted into the oncoming lane to avoid danger?  Dangerous vehicle  Pedestrian etc.	→ 15	Are there any elements that cause danger avoidance type accidents?	→	1-15	2-15	3-15	4-15	5-15			8-15	9-15	10-15	11-15	12-15	13-15	14-15			1	18-15	19-1
		Did the head-on collision occur because a driver entered the curve at excessive speed without being able to check the alignment of the road ahead, straying into the oncoming lane without being able to confirm safety?  Entering the curve at high speed without confirming its alignment	→ 12	Are there any elements that make it difficult to understand the alignment?	<b>→</b>	1-12		3-12										13-12	14-12			1	18-12	
	2	Did the head-on collision occur because a driver changed to the oncoming lane to pass a vehicle without being able to confirm safety from oncoming vehicles?  Did the head-on collision occur because a driver entered the oncoming lane when passing without being able to confirm safety?	→ 10	Are there elements that make it difficult to confirm safety before moving into the oncoming lane to pass a vehicle?	<b>→</b>	1-10		3-10																
on collision		Passing without confirming safety	→ 11	Are there any elements that encourage frequent passing in the oncoming lane?	→			_									12-11							
Head-o	3	Did the head-on collision occur a driver shifted to the oncoming lane after judging that it is possible to pass safely?  Judging that it is possible to pass	→ 17	Are there any elements that encourage drivers to pass dangerously when it is easy to misunderstand the behavior of oncoming vehicles?	<b>→</b>		2-17		4-17															
	4	Did the head-on collision occur because a driver lost control of the vehicle, straying into the oncoming lane?  Cannot stop	→ 8		→					5-8														
	5	Did the head-on collision occur because a driver shifted into the oncoming lane to avoid danger?  Avoiding danger  Avoiding danger  Avoiding danger	→ 15	Check for elements that cause accidents by drivers avoiding other danger.	<b>→</b>	1-15	2-15	3-15	4-15	5-15			8-15	9-15	10-15	11-15	12-15	13-15	14-15			1	18-15	19-
	1	Did the vehicle hit the pedestrian crossing the road at a place where the driver did not know that pedestrians cross the road?  Dangerous crossing	→ 13	Are there elements that encourage pedestrians to cross roads dangerously.	<b>→</b>																			
ner crossing	2	Did the vehicle hit the pedestrian because the driver tried to confirm safety, but proceeded without being able to see the pedestrian?  Can neither see nor be seen	→ 1	Are there any elements that block visibility?	<b>→</b>	1-1		3-1										13-1						19
Other	4	Did the vehicle hit the pedestrian because the driver tried to confirm safety, made a judgment, and took action, but could not control the vehicle?	→ 8	Are there any elements that contribute to driver inability to control a vehicle?	<b>→</b>																			

<sup>\*</sup> Accident process pattern No. 5 is an accident that occurs when a driver has made an emergency stop or lane change to avoid danger, and it is difficult to hypothesize causes of this type of accident. So for this countermeasure (Cause code O-15), refer to other types of accidents.

<sup>\*</sup> Although causes of accidents are recorded for road environments that cause accidents, there are cases where the columns below them are all empty columns. This has been done so that the contents can be expanded by accumulating future data and obtaining the views of users of this manual.

		Accident process													ents that		accidents						(2)
<u> </u>			1	·		20	21		ide env 23	ironmen 24	t 25	27	Ros 28	ad surfa 29	ce condi	tions 31	Congestio	n/stopping	37		Others	42	42
Type of accident	Accident process pattern No.	State of occurrence of accidents	CI	eck points of the road environment that causes accident	s	Obstructions to vision on the road sides by buildings, walls, etc.)	Rows of bright structures lining the roadway	acilities that distract drivers	Heavily used roadside facility driveway SxiVentrance	Heavily used narrow streets	Unclear roadside facility driveway SxiVentrance or narrow street	Visibility reduced by sunlight in the morning and in the west	Deteriorated road surface paving (ruts and cracks)	Poor drainage	Deposited mud or sand	Road surface icing	Vehicles preparing to turn right or left stopping or decelerating on the main so	Congested main road \$	Heavy traffic on the main road	clists on and nd shoulders	facilities	ycles weaving through vehicle	On-street parking and stopped busses bostructing traffic movement
	1	Did the collision occur because the vehicle ahead unexpectedly stopped, decelerated, or changed lanes?	→ 14	Are there elements that encourage drivers to make frequent emergency stops, to decelerate, or to change lanes on the main road?	<b>→</b>			22-14	23-14	24-14	25-14						34-14	35-14		- 3			43-14
collision	2	Did the collision occur because of delayed awareness of the vehicle ahead?	<b>→</b> 1	Are there any elements that block visibility?	<b>→</b>	20-1						27-1											
ar-end	4	Did the collision occur the driver tried to confirm safety, made a judgment, and took action, but could not control the vehicle?	→ 8	Are there any elements that contribute to driver inability to control a vehicle?	<b>→</b>								28-8	29-8	30-8	31-8							
æ	5	Did the collision occur because a driver abruptly stopped or changed lanes to avoid danger?  Avoiding danger	→ 15	Check for elements that cause accidents by drivers avoiding other danger.	->	20-15	21-15	22-15	23-15	24-15	25-15	27-15	28-15	29-15	30-15	31-15	34-15	35-15			41-15		43-15
6	2	Did the vehicle leave its lane colliding with an object, because it entered a curve or narrow road section at excessive speed without being able to confirm the alignment of the road ahead?	→ 12	Are there any elements that make it difficult to understand the alignment?	<b>→</b>																		
e departur	4	Did the vehicle leave its lane colliding with an object because the driver tried to confirm safety, made a judgment, and took action, but could not control the vehicle?	→ 8	Are there any elements that contribute to a driver's inability to control a vehicle?	<b>→</b>								28-8	29-8	30-8	31-8					-		
Lan	5	Did the collision occur because the vehicle shifted into the oncoming lane to avoid danger?  Dangerous vehicle  Pedestrian etc.	→ 15	Are there any elements that cause danger avoidance type accidents?	-	20-15	21-15	22-15	23-15	24-15	25-15	27-15	28-15	29-15	30-15	31-15	34-15	35-15			41-15		43-15
		Did the head-on collision occur because a driver entered the curve at excessive speed without being able to check the alignment of the road ahead, straying into the oncoming lane without being able to confirm safety?  Entering the curve at high speed without confirming its alignment	→ 12	Are there any elements that make it difficult to understand the alignment?	<b>→</b>																		
	2	Did the head-on collision occur because a driver changed to the oncoming lane to pass a vehicle without being able to confirm safety from oncoming vehicles?  Did the head-on collision occur because a driver entered the oncoming lane when passing without being able to confirm safety?	→ 10	Are there elements that make it difficult to confirm safety before moving into the oncoming lane to pass a vehicle?	<b>→</b>	20-10																	
n collision		Passing without confirming safety	→ 11	Are there any elements that encourage frequent passing in the oncoming lane?	· →																		43-11
Head-on coll	3	Did the head-on collision occur a driver shifted to the oncoming lane after judging that it is possible to pass safely?  Judging that it is possible to pass	→ 17	Are there any elements that encourage drivers to pass dangerously when it is easy to misunderstand the behavior of oncoming vehicles?	<b>→</b>																,		
	4	Did the head-on collision occur because a driver lost control of the vehicle, straying into the oncoming lane?  Cannot stop	→ 8	Are there any elements that contribute to driver inability to control a vehicle?	<b>→</b>								28-8	29-8	30-8	31-8							
	5	Did the head-on collision occur because a driver shifted into the oncoming lane to avoid danger?  Avoiding danger  Avoiding danger	→ 15		->	20-15	21-15	22-15	23-15	5 24-15	25-15	27-15	28-15	29-15	30-15	31-15	34-15	35-15			41-15		43-15
	1	Did the vehicle hit the pedestrian crossing the road at a place where the driver did not know that pedestrians cross the road?  Dangerous crossing	→ 13		-													35-13			41-13		43-13
Other crossing	2	Did the vehicle hit the pedestrian because the driver tried to confirm safety, but proceeded without being able to see the pedestrian?  Can neither see nor be seen	→ 1	Are there any elements that block visibility?	<b>-</b>	20-1	21-1					27-1						35-1					43-1
δ	4	Did the vehicle hit the pedestrian because the driver tried to confirm safety, made a judgment, and took action, but could not control the vehicle?	→ 8	Are there any elements that contribute to driver inability to control a vehicle?	<b>→</b>								28-8	29-8	30-8	31-8							

<sup>\*</sup> Accident process pattern No. 5 is an accident that occurs when a driver has made an emergency stop or lane change to avoid danger, and it is difficult to hypothesize causes of this type of accident. So for this countermeasure (Cause code O-15), refer to other types of accidents.

		(12) Uninterrupted flow section – flat land – 2-lanes or less – side	, <del>11 u</del>			<u> </u>						R	oad envi	ronmen	ts that c	ause a	ccidents							1/2)
		Accident process					Doc	d alian				factors			anachiá	dib.						nt factor	S	
				· · · · · · · · · · · · · · · · · · ·		1		d alignr		5	Intersect	on snape	8	9	anes/wi	_	12	13	14	15	ories/str 16	17	18	19
lype or accident	Accident process pattern No.	State of occurrence of accidents	Ch	eck points of the road environment that causes accident	ts .	sharp curve	ong steep downhill gradient	rest	ong straight section	leverse cant	corner cut-off with large radius	Obtuse angle intersection	larrow lanes	sudden decline of the number and vidth of lanes	complex change of the number and idth of lanes	Changing lane operation (through lane changes to a left or right turn lane)	slow vehicles traveling in a section vithout a passing zone (lane)	bark intersection where pedestrians, arked vehicles, and the alignment are ifficult to see	Optical guidance either not installed or nadequate (nighttime)	oorly located and maintained trees	oorly located and maintained trees, ignboards, etc. on the sidewalks	lian	nappropriately located traffic signs with nsuitable contents (unclear and omplex)	
		Did the collision occur because the vehicle ahead unexpectedly stopped, decelerated, or changed lanes?	14	Are there elements that encourage drivers to make frequent emergency stops, to decelerate, or to change lanes on the main road?	<b>→</b>	- U)		J					8-14	9-14	10-14		"/		, <u> </u>	ii. W	u g		18-14	
	2	Did the collision occur because of delayed awareness of the vehicle ahead?	1	Are there any elements that block visibility?	<b>→</b>	1-1																		
	4	Did the collision occur the driver tried to confirm safety, made a judgment, and took action, but could not control the vehicle?	8	Are there any elements that contribute to driver inability to control a vehicle?	→																			
	5	Did the collision occur because a driver abruptly stopped or changed lanes to avoid danger?  Avoiding danger	15	Check for elements that cause accidents by drivers avoiding other danger.	<b>-</b>	1-15	2-15	3-15	4-15	5-15			8-15	9-15	10-15	11-15	12-15	13-15	14-15				18-15	19
		Did the head-on collision occur because a driver entered the curve at excessive speed without being able to check the alignment of the road ahead, straying into the oncoming lane without being able to confirm safety?  Entering the curve at high speed without confirming its alignment	12	Are there any elements that make it difficult to understand the alignment?	<b>→</b>	1-12		3-12				_						13-12	14-12				18-12	
	2	Did the head-on collision occur because a driver changed to the oncoming lane to pass a vehicle without being able to confirm safety from oncoming vehicles?  Did the head-on collision occur because a driver entered the oncoming lane when passing without being able to confirm safety?	10	Are there elements that make it difficult to confirm safety before moving into the oncoming lane to pass a vehicle?	<b>→</b>	1-10		3-10																
		Passing without confirming safety →	11	Are there any elements that encourage frequent passing in the oncoming lane?	<b>→</b>												12-11							
2	3	Did the head-on collision occur a driver shifted to the oncoming lane after judging that it is possible to pass safely?  Judging that it is possible to pass	17	Are there any elements that encourage drivers to pass dangerously when it is easy to misunderstand the behavior of oncoming vehicles?	<b>→</b>		2-17		4-17															
	4	Did the head-on collision occur because a driver lost control of the vehicle, straying into the oncoming lane?	8	Are there any elements that contribute to driver inability to control a vehicle?	<b>→</b>					5-8														
	5	Did the head-on collision occur because a driver shifted into the oncoming lane to avoid danger?  Avoiding danger  Avoiding danger  Avoiding danger	15	Check for elements that cause accidents by drivers avoiding other danger.	<b>→</b>	1-15	2-15	3-15	4-15	5-15			8-15	9-15	10-15	11-15	5 12-15	13-15	14-15				18-15	•
b	2	Did the vehicle leave its lane colliding with an object, because it entered a curve or narrow road section at excessive speed without being able to confirm the alignment of the road ahead?	12	Are there any elements that make it difficult to understand the alignment?	<b>→</b>	1-12		3-12						9-12	10-12			13-12	14-12				18-12	L
s departure	4	Did the vehicle leave its lane colliding with an object because the driver tried to confirm safety, made a judgment, and took action, but could not control the vehicle?	8	Are there any elements that contribute to driver inability to control a vehicle?	<b>→</b>					5-8														L
	5	Did the collision occur because the vehicle shifted into the oncoming lane to avoid danger?  Dangerous vehicle	15		<b>-</b>	1-15	2-15	3-15		5-15			8-15	9-15	10-15	11-1	5 12-15	13-15	14-15				18-15	
	1	Did the vehicle hit the pedestrian crossing the road at a place where the driver did not know that pedestrians cross the road?  Dangerous crossing	13	Are there elements that encourage pedestrians to cross roads dangerously.	-																			
Surgeon lair	2	Did the vehicle hit the pedestrian because the driver tried to confirm safety, but proceeded without being able to see the pedestrian?  Can neither see nor be seen	1	Are there any elements that block visibility?	<b>→</b>	1-1		3-1										13-1						
ਰੈ	4	Did the vehicle hit the pedestrian because the driver tried to confirm safety, made a judgment, and took action, but could not control the vehicle?	. 8	Are there any elements that contribute to driver inability to control a vehicle?	<b>→</b>																	!		

<sup>\*</sup> Accident process pattern No. 5 is an accident that occurs when a driver has made an emergency stop or lane change to avoid danger, and it is difficult to hypothesize causes of this type of accident. So for this countermeasure (Cause code O-15), refer to other types of accidents.

<sup>\*</sup> Although causes of accidents are recorded for road environments that cause accidents, there are cases where the columns below them are all empty columns. This has been done so that the contents can be expanded by accumulating future data and obtaining the views of users of this manual.

Pattern (12) Uninterrupted flow section – flat land – 2-lanes or less – sidewalks

		Accident process	,		_					·						cause a	accidents rs						(2)
						20		Roadsi 22	de envi 23	ronmen 24		27	Roa 28	d surfa	ce condi	tions 31	Congestio 34	n/stopping 35	37	40	Others 41	42	43
Type of accident	Accident process pattern No.	State of occurrence of accidents	(	check points of the road environment that causes accidents	Obstructions to vision on the road sides	, walls, etc.)	Rows of bright structures lining the roadway	Facilities that distract drivers	Heavily used roadside facility driveway exit/entrance	Heavily used narrow streets	Unclear roadside facility driveway exit/entrance or narrow street	Visibility reduced by sunlight in the morning and in the west	Deteriorated road surface paving (ruts and cracks)	Poor drainage	Deposited mud or sand	Road surface icing	Vehicles preparing to turn right or left stopping or decelerating on the main froad	Congested main road	Heavy traffic on the main road	Many pedestrians or cyclists on and arcound the sidewalks and shoulders	No crossing facilities at a location they are needed	Motorcycles weaving through vehicle raffic	On-street parking and stopped busses obstructing traffic movement
	1	Did the collision occur because the vehicle ahead unexpectedly stopped, decelerated, or changed lanes?	<b>→</b> 1.	Are there elements that encourage drivers to make frequent emergency stops, to decelerate, or to change lanes on the main road?	<b>→</b>			22-14	23-14	24-14	25-14						34-14	35-14					43-14
collision	2	Did the collision occur because of delayed awareness of the vehicle ahead?	→ 1	Are there any elements that block visibility?	→ 20	)-1						27-1											
ar-end c	4	Did the collision occur the driver tried to confirm safety, made a judgment, and took action, but could not control the vehicle?	<b>→</b>   8	Are there any elements that contribute to driver inability to control a vehicle?	<b>→</b>								28-8	29-8	30-8	31-8							
Re	5	Did the collision occur because a driver abruptly stopped or changed lanes to avoid danger?  Avoiding danger  Avoiding danger	→ 1	Check for elements that cause accidents by drivers avoiding other danger.	→ 20	-15	21-15	22-15	23-15	24-15	25-15	27-15	28-15	29-15	30-15	31-15	34-15	35-15			41-15		43-15
		Did the head-on collision occur because a driver entered the curve at excessive speed without being able to check the alignment of the road ahead, straying into the oncoming lane without being able to confirm safety?  Entering the curve at high speed without confirming its alignment	→ 1	Are there any elements that make it difficult to understand the alignment?	<b>→</b>																		
,	2	Did the head-on collision occur because a driver changed to the oncoming lane to pass a vehicle without being able to confirm safety from oncoming vehicles?  Did the head-on collision occur because a driver entered the oncoming lane when passing without being able to confirm safety?	→ 1		→ 20	-10																	
on collisio			→ 1	Are there any elements that encourage frequent passing in the oncoming lane?	<b>→</b>																		43-11
Head-	3	Did the head-on collision occur a driver shifted to the oncoming lane after judging that it is possible to pass safely?  Judging that it is possible to pass	→ 1	the behavior of oncoming venicles?	<b>→</b>																		
	4	Did the head-on collision occur because a driver lost control of the vehicle, straying into the oncoming lane?	→	Are there any elements that contribute to driver inability to control a vehicle?	<b>→</b>								28-8	29-8	30-8	31-8							· 
	5	Did the head-on collision occur because a driver shifted into the oncoming lane to avoid danger?  Avoiding danger  Avoiding danger  Avoiding danger	→ 1		→ 20	-15	21-15	22-15	23-15	24-15	25-15	27-15	28-15	29-15	30-15	31-15	34-15	35-15			41-15		43-15
	2	Did the vehicle leave its lane colliding with an object, because it entered a curve or narrow road section at excessive speed without being able to confirm the alignment of the road ahead?	→ 1	Are there any elements that make it difficult to understand the alignment?	<b>→</b>																		
departure	4	Did the vehicle leave its lane colliding with an object because the driver tried to confirm safety, made a judgment, and took action, but could not control the vehicle?	<b>→</b>	Are there any elements that contribute to driver inability to control a vehicle?	→								28-8	29-8	30-8	31-8							
Lane	5	Did the collision occur because the vehicle shifted into the oncoming lane to avoid danger?  Dangerou vehicle  Pedestrian etc.	<b>→</b>		→ 20	)-15	21-15	22-15	23-15	5 24-15	5 25-15	5 27-15	28-15	29-15	30-15	31-15	34-15	35-15			41-15		43-15
	1	Did the vehicle hit the pedestrian crossing the road at a place where the driver did not know that pedestrians cross the road?  Dangerous crossing	→	Are there elements that encourage pedestrians to cross roads dangerously.	→													35-13			41-13		43-13
her crossing	2	Did the vehicle hit the pedestrian because the driver tried to confirm safety, but proceeded without being able to see the pedestrian?  Can neither see nor be seen	<b>→</b>		→ 2	20-1	21-1					27-1						35-1					43-1
ð	4	Did the vehicle hit the pedestrian because the driver tried to confirm safety, made a judgment, and took action, but could not control the vehicle?	<b>→</b>	Are there any elements that contribute to driver inability to control a vehicle?	<b>→</b>								28-8	29-8	30-8	31-8							

<sup>\*</sup> Accident process pattern No. 5 is an accident that occurs when a driver has made an emergency stop or lane change to avoid danger, and it is difficult to hypothesize causes of this type of accident. So for this countermeasure (Cause code O-15), refer to other types of accidents.

		Accident process									Road fa		ad envi	onment	s that ca	ause acc	idents	T		raffic en	vironmen	t factors		
	_						Road				Intersection				nes/wid		- 40	10			ories/stru		40	
Type of accident	Accident process pattern No.	State of occurrence of accidents	Che	ock points of the road environment that causes accidents	1 aving grade		Long steep downhill gradient	Ωrest ω	ong straight section	Reverse cant	Corner cut-off with large radius	Obtuse angle intersection	Narrow lanes	Sudden decline of the number and width of lanes	Complex change of the number and width of lanes	Changing lane operation (through lane changes to a left or right turn lane)	Slow vehicles traveling in a section without a passing zone (lane)	Dark intersection where pedestrians, parked vehicles, and the alignment are difficult to see	Optical guidance either not installed or inadequate (nighttime)	Poorty located and maintained trees etc. on the center median	Poorly located and maintained trees, signboards, etc. on the sidewalks	Negligently cut center median		Bridge piers and other structures 6
		Did the head-on collision occur because a driver entered the curve at excessive speed without being able to check the alignment of the road ahead, straying into the oncoming lane without being able to confirm safety?  Entering the curve at high speed without confirming its alignment	12	Are there any elements that make it difficult to understand the alignment?  →	1-1	12	3	3-12					<del></del>					13-12	14-12			1	18-12	
:	2	Did the head-on collision occur because a driver changed to the oncoming lane to pass a vehicle without being able to confirm safety from oncoming vehicles?  Did the head-on collision occur because a driver entered the oncoming lane when passing without being able to confirm safety?	10	Are there elements that make it difficult to confirm safety before moving into the oncoming lane to pass a vehicle?	1-1	10		3-10																
on collision		Passing without confirming safety  Did the head-on collision occur a driver shifted to the oncoming	11	Are there any elements that encourage frequent passing in the oncoming lane?	.												12-11							
Head-c	3	lane after judging that it is possible to pass safely?  Judging that it is possible to pass  Did the head-on collision occur because a driver lost control	17	pass dangerously when it is easy to misunderstand the behavior of oncoming vehicles?	.	2	-17		4-17															
	4	of the vehicle, straying into the oncoming lane?  Cannot stop  Did the head-on collision occur because a driver	8	inability to control a vehicle?  Check for elements that cause accidents by drivers	•					5-8														
	5	shifted into the oncoming lane to avoid danger?  Avoiding danger  Avoiding danger  Avoiding danger	15	avoiding other danger. →	1-	15 2	-15	3-15	4-15	5-15			8-15	9-15	10-15	11-15	12-15	13-15	14-15			•	18-15	
	2	Did the vehicle leave its lane colliding with an object, because it entered a curve or narrow road section at excessive speed without being able to confirm the alignment of the road ahead?  Delayed awareness of the alignment	12		1-	12	:	3-12						9-12	10-12			13-12	14-12				18-12	
Lane departure	4	Did the vehicle leave its lane colliding with an object because the driver tried to confirm safety, made a judgment, and took action, but could not control the vehicle?	8	Are there any elements that contribute to driver inability to control a vehicle?  Check for elements that cause accidents by drivers	<b>&gt;</b>					5-8														
֟ ֡ ֡	5	Did the collision occur because the vehicle shifted into the oncoming lane to avoid danger?  Dangerous vehicle	15	avoiding other danger.	• 1-	15 2	2-15	3-15	4-15	5-15			8-15	9-15	10-15	11-15	12-15	13-15	14-15				18-15	
	1	Did the collision occur because the vehicle ahead unexpectedly stopped, decelerated, or changed lanes?  Dangerous stopping and decelerating  Lane change	<b>)</b> 14	Charge railes on the main road:	•								8-14	9-14	10-14	11-14							18-14	
end collision	2	Did the collision occur because of delayed awareness of the vehicle ahead?  Did the collision occur the driver tried to confirm safety, made a judgment, and took action, but could not control the vehicle?	ļ-	Are there any elements that contribute to driver	→ 1	-1																		
Rear	5	Did the collision occur because a driver abruptly stopped or changed lanes to avoid danger?		Check for elements that cause accidents by drivers avoiding other danger.		-15	2-15	3-15	4-15	5-15			8-15	9-15	10-15	5 11-15	12-1	5 13-15	5 14-15	5			18-15	

<sup>\*</sup> Accident process pattern No. 5 is an accident that occurs when a driver has made an emergency stop or lane change to avoid danger, and it is difficult to hypothesize causes of this type of accident. So for this countermeasure (Cause code O-15), refer to other types of accidents.

<sup>\*</sup> Although causes of accidents are recorded for road environments that cause accidents, there are cases where the columns below them are all empty columns. This has been done so that the contents can be expanded by accumulating future data and obtaining the views of users of this manual.

		Accident process							Roade	de envi	nnmen	•		1	raffic er		nt factor	ccidents rs Congestio	n/stopping			Others		
			Т			$\dashv$	20	21	22	23	24		27	28		30		34	35	37	40	41	42	43
Type of accident	Accident process pattern No.	State of occurrence of accidents		Che	eck points of the road environment that causes accidents		Obstructions to vision on the road sides (buildings, walls, etc.)	Rows of bright structures lining the roadway	-acilities that distract drivers	Heavily used roadside facility driveway	Heavily used narrow streets	Unclear roadside facility driveway exit/entrance or narrow street	Visibility reduced by sunlight in the morning and in the west	Deteriorated road surface paving (ruts and cracks)	Poor drainage	Deposited mud or sand	Road surface icing	vehicles preparing to turn right or left stopping or decelerating on the main oad	Congested main road	Heavy traffic on the main road	Many pedestrians or cyclists on and around the sidewalks and shoulders	No crossing facilities at a location they are needed	ehicle	On-street parking and stopped busses obstructing traffic movement
		Did the head-on collision occur because a driver entered the curve at excessive speed without being able to			Are there any elements that make it difficult to understand the alignment?	$\neg$	-				T -		-	1 10		<del>-</del> -								-
		check the alignment of the road ahead, straying into the oncoming lane without being able to confirm safety?  Entering the curve at high speed without confirming its alignment	<b>→</b>	12	understand the angliment?	<b>→</b>					•													
	2	Did the head-on collision occur because a driver changed to the oncoming lane to pass a vehicle without being able to confirm safety from oncoming vehicles?  Did the head-on collision occur because a driver entered the oncoming lane when passing without being able to confirm safety?	<b>→</b>	10	Are there elements that make it difficult to confirm safety before moving into the oncoming lane to pass a vehicle?	<b>→</b>	20-10																	
collision		Passing without confirming safety	<b>→</b>	11	Are there any elements that encourage frequent passing in the oncoming lane?	<b>→</b>																		43-11
Head-on	3	Did the head-on collision occur a driver shifted to the oncoming lane after judging that it is possible to pass safely?  Judging that it is possible to pass	→	17	Are there any elements that encourage drivers to pass dangerously when it is easy to misunderstand the behavior of oncoming vehicles?	<b>→</b>																		
	4	Did the head-on collision occur because a driver lost control of the vehicle, straying into the oncoming lane?  Cannot stop	<b>→</b>	8	Are there any elements that contribute to driver inability to control a vehicle?	<b>→</b>								28-8	29-8	30-8	31-8							
	5	Did the head-on collision occur because a driver shifted into the oncoming lane to avoid danger?  Avoiding danger  Avoiding danger  Avoiding danger	<b>→</b>	15	Check for elements that cause accidents by drivers avoiding other danger.	<b>→</b>	20-15		22-15	23-15	24-15	25-15	27-15	28-15	29-15	30-15	31-15	34-15	35-15					43-15
	2	Did the vehicle leave its lane colliding with an object, because it entered a curve or narrow road section at excessive speed without being able to confirm the alignment of the road ahead?	<b>→</b>	12	Are there any elements that make it difficult to understand the alignment?	<b>→</b>																		
e departure	4	Did the vehicle leave its lane colliding with an object because the driver tried to confirm safety, made a judgment, and took action, but could not control the vehicle?	<b>→</b>	,8	Are there any elements that contribute to driver inability to control a vehicle?	<b>→</b>								28-8	29-8	30-8	31-8	į						
Lane	5	Did the collision occur because the vehicle shifted into the oncoming lane to avoid danger?  Dangerous vehicle  Pedestrian etc.	<b>→</b>	15	Check for elements that cause accidents by drivers avoiding other danger.	<b>→</b>	20-15	-	22-15	23-15	24-15	25-15	27-15	28-15	29-15	30-15	31-15	34-15	35-15					43-15
,	1	Did the collision occur because the vehicle ahead unexpectedly stopped, decelerated, or changed lanes?  Dangerous stopping and decelerating  Lane change	<b>→</b>	14	Are there elements that encourage drivers to make frequent emergency stops, to decelerate, or to change lanes on the main road?	<b>→</b>			22-14	23-14	24-14	25-14						34-14	35-14					43-14
d collision	2	Did the collision occur because of delayed awareness of the vehicle ahead?  Noticed too late	<b>→</b>	1	Are there any elements that block visibility?	<b>→</b>	20-1						27-1											
Rear-end	4	Did the collision occur the driver tried to confirm safety, made a judgment, and took action, but could not control the vehicle?  Cannot stop	<b>→</b>	8	Are there any elements that contribute to driver inability to control a vehicle?	<b>→</b>								28-8	29-8	30-8	31-8							
	5	Did the collision occur because a driver abruptly stopped or changed lanes to avoid danger?  Avoiding danger  Avoiding danger	<b>→</b>	15	Check for elements that cause accidents by drivers avoiding other danger.	<b>→</b>	20-15		22-15	23-15	24-15	25-15	27-15	28-15	29-15	30-15	31-15	34-15	35-15					43-15

<sup>\*</sup> Accident process pattern No. 5 is an accident that occurs when a driver has made an emergency stop or lane change to avoid danger, and it is difficult to hypothesize causes of this type of accident. So for this countermeasure (Cause code O-15), refer to other types of accidents.

		Accident process								Por	Ro ad factors	ad envi	ronment	s that c	ause acc	cidents		7					1/2)
			,			R	oad align	ment			ection shape		Li	anes/wi	dth				raffic env Accesso				
						2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
Type of accident	Accident process pattern No.	State of occurrence of accidents	С	neck points of the road environment that causes accidents	dans and		Srest	ong straight section	Reverse cant	Corner cut-off with large radius	Obtuse angle intersection	varrow lanes	Sudden decline of the number and vidth of lanes	Complex change of the number and vidth of lanes	Changing lane operation (through lane changes to a left or right turn lane)	slow vehicles traveling in a section vithout a passing zone (lane)	Dark intersection where pedestrians, sarked vehicles, and the alignment are lifficult to see	Optical guidance either not installed or inadequate (nighttime)	Poorly located and maintained trees stc. on the center median	oorly located and maintained trees, ignboards, etc. on the sidewalks	edian	Inappropriately located traffic signs with unsuitable contents (unclear and complex)	kridge piers and other structures
		Did the head-on collision occur because a driver entered the curve at excessive speed without being able to check the alignment of the road ahead, straying into the oncoming lane without being able to confirm safety?		Are there any elements that make it difficult to understand the alignment?	<del>                                     </del>			-			1		0/5	0 3	0.8	0, 5	<u> </u>	<u> </u>	ш в	T &		= 3 0	
		Entering the curve at high speed without confirming its alignment	12		1-	2	3-12										13-12	14-12				18-12	
	2	Did the head-on collision occur because a driver changed to the oncoming lane to pass a vehicle without being able to confirm safety from oncoming vehicles?  Did the head-on collision occur because a driver entered the oncoming lane when passing without being able to confirm safety?	10	Are there elements that make it difficult to confirm safety before moving into the oncoming lane to pass a vehicle?  →	1.	0	3-10																
collision		Passing without confirming safety -	• 11	Are there any elements that encourage frequent passing in the oncoming lane?												12-11							
Head-or	3	Did the head-on collision occur a driver shifted to the oncoming lane after judging that it is possible to pass safely?  Judging that it is possible to pass	<b>→</b> 17	Are there any elements that encourage drivers to pass dangerously when it is easy to misunderstand the behavior of oncoming vehicles?  →		2-17		4-17	,														
	4	Did the head-on collision occur because a driver lost control of the vehicle, straying into the oncoming lane?  Cannot stop	8	Are there any elements that contribute to driver inability to control a vehicle?  →					5-8														
	5	Did the head-on collision occur because a driver shifted into the oncoming lane to avoid danger?  Avoiding danger  Avoiding danger  Avoiding danger	→ 15	Check for elements that cause accidents by drivers avoiding other danger.  →	1-1	5 2-15	3-15	4-15	5 5-15			8-15	9-15	10-15	11-15	12-15	13-15	14-15		16-15		18-15	
	2	Did the vehicle leave its lane colliding with an object, because it entered a curve or narrow road section at excessive speed without being able to confirm the alignment of the road ahead?  Delayed awareness of the alignment of the road ahead?	<b>)</b> 12	Are there any elements that make it difficult to understand the alignment?	1-	2	3-12						9-12	10-12			13-12	14-12				18-12	
ne departure	4	Did the vehicle leave its lane colliding with an object because the driver tried to confirm safety, made a judgment, and took action, but could not control the vehicle?	→ 8	Are there any elements that contribute to driver inability to control a vehicle?  →					5-8									·					
Lane	5	Did the collision occur because the vehicle shifted into the oncoming lane to avoid danger?  Dangeroux vehicle  Pedestrian etc.	→ 15	Check for elements that cause accidents by drivers avoiding other danger.  →	1-	5 2-15	3-15	4-15	5-15			8-15	9-15	10-15	11-15	12-15	13-15	14-15		16-15		18-15	
	1	Did the collision occur because the vehicle ahead unexpectedly stopped, decelerated, or changed lanes?  Dangerous stopping and decelerating  Lane change	→ 14	Are there elements that encourage drivers to make frequent emergency stops, to decelerate, or to change lanes on the main road?  →								8-14	9-14	10-14	11-14							18-14	
d collision	2	Did the collision occur because of delayed awareness of the vehicle ahead?  Noticed too late	<b>1</b>	Are there any elements that block visibility?  →	1-	1														16-1			
Rear-end	4	Cannot stop	→ 8	Are there any elements that contribute to driver inability to control a vehicle?																			
	5	Did the collision occur because a driver abruptly stopped or changed lanes to avoid danger?  Avoiding danger  Dangerous vehicle	→ 15	Check for elements that cause accidents by drivers avoiding other danger.  →	1-	5 2-15	3-15	4-15	5 5-15			8-15	9-15	10-15	11-15	12-15	13-15	14-15		16-15		18-15	

<sup>\*</sup> Accident process pattern No. 5 is an accident that occurs when a driver has made an emergency stop or lane change to avoid danger, and it is difficult to hypothesize causes of this type of accident. So for this countermeasure (Cause code O-15), refer to other types of accidents.

<sup>\*</sup> Although causes of accidents are recorded for road environments that cause accidents, there are cases where the columns below them are all empty columns. This has been done so that the contents can be expanded by accumulating future data and obtaining the views of users of this manual.

Pattern (14) Uninterrupted flow section – mountainous land – 2-lanes or less – sidewalks

		Accident process											1	raffic er	nvironm	ent facto							(2/2
	Г Т		1			20	21		ide envi	ronmen 24		27	Roa 28	d surfa	ce cond	itions 31	Congestio 34	n/stopping 35	37	40	Others	42	
Type of accident	Accident process pattern No.	State of occurrence of accidents		heck points of the road environment that causes acciden	ts	Obstructions to vision on the road sides (buildings, walls, etc.)	Rows of bright structures lining the roadway	acilities that distract drivers	Heavily used roadside facility driveway sxityentrance	Heavily used narrow streets	Unclear roadside facility driveway sxit/entrance or narrow street	Asibility reduced by sunlight in the norning and in the west	Deteriorated road surface paving (ruts and cracks)	Poor drainage	Deposited mud or sand	Road surface icing	/ehicles preparing to turn right or left topping or decelerating on the main oad	Congested main road	deavy traffic on the main road	Many pedestrians or cyclists on and argument the sidewalks and shoulders	No crossing facilities at a location they are needed	ehicle	On-street parking and stopped busses & Obstructing traffic movement
		Did the head-on collision occur because a driver entered the curve at excessive speed without being able to check the alignment of the road ahead, straying into the oncoming lane without being able to confirm safety?	<u> </u>	Are there any elements that make it difficult to understand the alignment?					1 4		1				<del>  "</del> -	<u> </u>	76=	<u> </u>		< 0	28	25	<u> </u>
			<b>→</b> 1		<b>→</b>																		
	2	Did the head-on collision occur because a driver changed to the oncoming lane to pass a vehicle without being able to confirm safety from oncoming vehicles?  Did the head-on collision occur because a driver entered the oncoming lane when passing without being able to confirm safety?	<b>→</b> 1	Are there elements that make it difficult to confirm safety before moving into the oncoming lane to pass a vehicle?	<b>→</b>	20-10														,			
Head-on collision		Passing without confirming safety -	<b>→</b> 1	Are there any elements that encourage frequent passing in the oncoming lane?	<b>→</b>																	,	43-11
Head-on	3	Did the head-on collision occur a driver shifted to the oncoming lane after judging that it is possible to pass safely?  Judging that it is possible to pass	<b>→</b> 1	Are there any elements that encourage drivers to pass dangerously when it is easy to misunderstand the behavior of oncoming vehicles?	<b>→</b>																		
	4	Did the head-on collision occur because a driver lost control of the vehicle, straying into the oncoming lane?  Cannot stop	→ {	Are there any elements that contribute to driver inability to control a vehicle?									28-8	29-8	30-8	31-8							
	5	Did the head-on collision occur because a driver shifted into the oncoming lane to avoid danger?  Avoiding danger  Avoiding danger  Avoiding danger	→ 1	Check for elements that cause accidents by drivers avoiding other danger.	<b>→</b>	20-15		22-15	23-15	24-15	25-15	27-15	28-15	29-15	30-15	31-15	34-15	35-15				4	43-15
	2	Did the vehicle leave its lane colliding with an object, because it entered a curve or narrow road section at excessive speed without being able to confirm the alignment of the road ahead?  Delayed awareness of the alignment	→ 1	Are there any elements that make it difficult to understand the alignment?	<b>→</b>														·				
ne departure	4	Did the vehicle leave its lane colliding with an object because the driver tried to confirm safety, made a judgment, and took action, but could not control the vehicle?	→ {	Are there any elements that contribute to driver inability to control a vehicle?	<b>→</b>								28-8	29-8	30-8	31-8							
Lane	5	Did the collision occur because the vehicle shifted into the oncoming lane to avoid danger?  Dangerous vehicle  Pedestrian etc.	→ 1	Check for elements that cause accidents by drivers avoiding other danger.	<b>→</b>	20-15		22-15	23-15	24-15	25-15	27-15	28-15	29-15	30-15	31-15	34-15	35-15				,	43-15
	1	Did the collision occur because the vehicle ahead unexpectedly stopped, decelerated, or changed lanes?  Dangerous stopping and decelerating  Lane change	<b>→</b> 1	Are there elements that encourage drivers to make frequent emergency stops, to decelerate, or to change lanes on the main road?	-			22-14	23-14	24-14	25-14						34-14	35-14					43-14
d collision	2	Noticed too late	→ 1	Are there any elements that block visibility?	<b>→</b>	20-1						27-1											
Rear-end co	4	Cannot stop	→ {		<b>-</b>								28-8	29-8	30-8	31-8							
	5	Did the collision occur because a driver abruptly stopped or changed lanes to avoid danger?  Avoiding danger  Avoiding danger	→ 1	Check for elements that cause accidents by drivers avoiding other danger.	<b>-</b>	20-15		22-15	23-15	24-15	25-15	27-15	28-15	29-15	30-15	31-15	34-15	35-14		-		,	43-15

<sup>\*</sup> Accident process pattern No. 5 is an accident that occurs when a driver has made an emergency stop or lane change to avoid danger, and it is difficult to hypothesize causes of this type of accident. So for this countermeasure (Cause code O-15), refer to other types of accidents.