

Countermeasure Cases

Countermeasure Cases summarizes the contents of countermeasures and precautions to be followed when implementing them based on implementation of countermeasures at hazardous spots.

[Road Administrator's Countermeasures]

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[Public Safety Commission's Countermeasures]

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Road surface indicators

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Countermeasure name	(1) Reducing the radius of corner cut-offs	Purpose	Restricting speed
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<Countermeasure locations>

Locations where the cut-off radius is large so that vehicles turn left at high speed.

<Content of the countermeasure>

Reducing the speed of vehicles turning left by extending the corner cut-off, lowering the area of the intersection.

<Precautions>

Sharply reducing the radius of a corner cut-off obstructs the smooth movement of vehicles turning left, cutting the traffic capacity of the intersection.

<Major types of accidents targeted>

Pedestrian crossing a crosswalk when a vehicle is turning right

<Countermeasure photographs>



Reducing the corner cut-off radius



* Top and bottom photographs: Kyoto National Highway Office, National Highway 24, Takedakubocho, Fushimi-ku, Kyoto-shi, Kyoto-fu (263366k)

Countermeasure name	(2) Increasing right-turn traffic lanes (to 2 lanes)	Purpose	Increasing traffic capacity
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<Countermeasure locations>

Locations where the right turn demand is high so drivers wait a long time to turn right.

<Content of the countermeasure>

Increasing the capacity of the intersection to handle right turns by increasing the right-turn traffic lanes to prevent dangerous right turns by shortening waiting time.

<Precautions>

It there are two or more right turn lanes, if a vehicle in the outside right turn lane is waiting to start turning right, the driver of a vehicle in the inside right turn lane has difficulty seeing oncoming through vehicles. Therefore, when implementing this countermeasure, it should be studied along with the installation of right turn traffic – through traffic separation signals to separate vehicles turning right from vehicles traveling straight through.

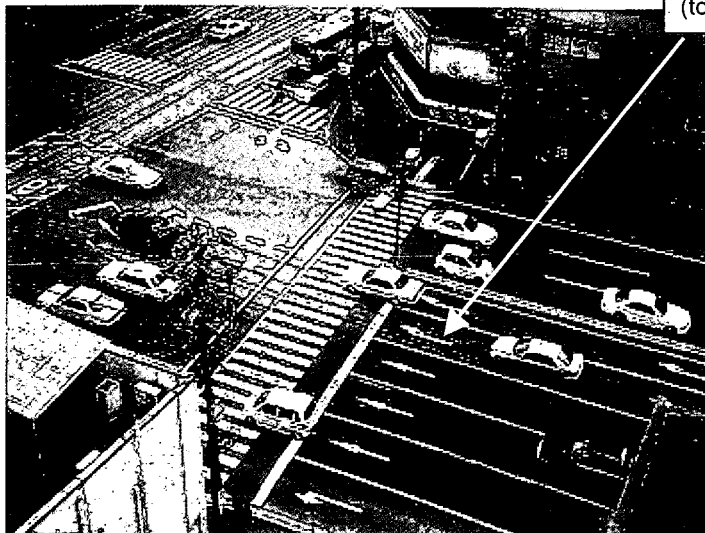
<Major types of accidents targeted>

Pedestrian crossing a crosswalk when a vehicle is turning right

<Countermeasure photographs>



Increasing right-turn traffic lanes
(to 2 lanes)



* Top and bottom photographs: Hiroshima National Highway Office, National Highway 2, Funairihonmachi, Naka-ku, Hiroshima-shi, Hiroshima-ken (343108k)

Countermeasure name	(3) Installing traffic islands	Purpose	Guiding vehicles
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<Countermeasure locations>

Locations where the course that vehicles travel is unclear because it is a large intersection
 Or, locations where pedestrian crossing distance is long

<Content of the countermeasure>

Smoothing the movement of vehicles through an intersection by clarifying the course each travels by installing a channelizing island. Installing a channelizing island protects pedestrians and, by shortening the crossing distance, reduces the possibility of contact between vehicles and pedestrians.

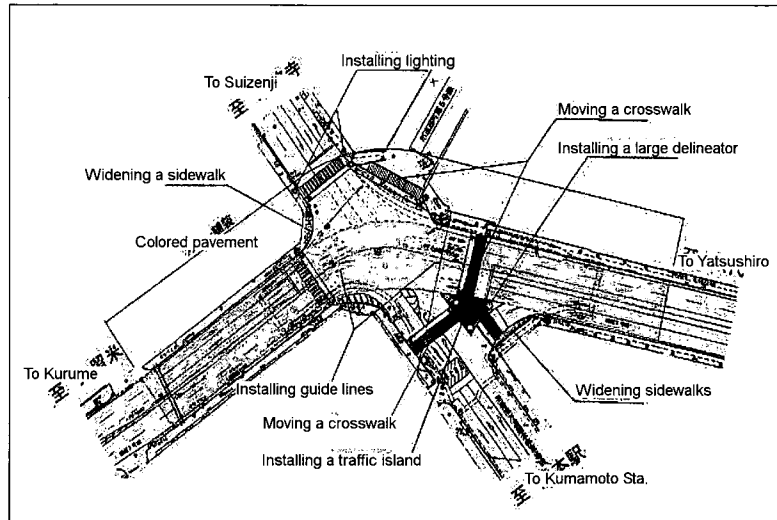
<Precautions>

In a right turn channel or other section with a small radius of curvature, the channel tends to be wide to account for the turning radius of large vehicles and they tend to pass through the channel parallel to a small vehicle. Therefore zebra markings must be applied to narrow the channel.

<Major types of accidents targeted>

Pedestrians crossing a crosswalk when a vehicle is turning right or turning left

<Countermeasure photographs>



* Photograph: Kumamoto National Highway Office, National Highway 3, 2 Mukaemachi, Kumamoto-shi, Kumamoto-ken (433170k)

Countermeasure name	(4) Installing a central zebra zone	Purpose	Others
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<Countermeasure locations>

Locations where right turn vehicles frequently obstruct through vehicles following them

<Content of the countermeasure>

Installing a zebra zone in the center to guarantee adequate space for right turn vehicles to stop before turning into a roadside facility or narrow side road in order to prevent them from obstructing following through vehicles. And to prevent drivers from making dangerous right turns in response to pressure from following through vehicles.

<Precautions>

To provide the width for a center zebra zone, it is necessary to narrow the traffic lanes or shoulders.

<Major types of accidents targeted>

Rear-end collision while a vehicle is turning right


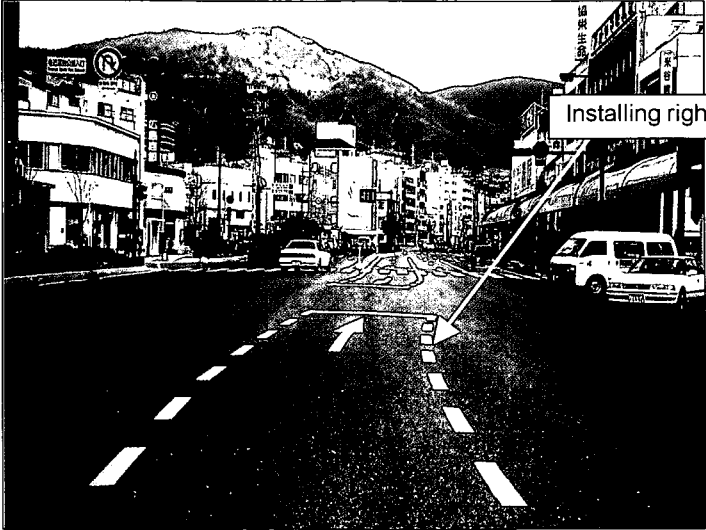
<Countermeasure photographs>


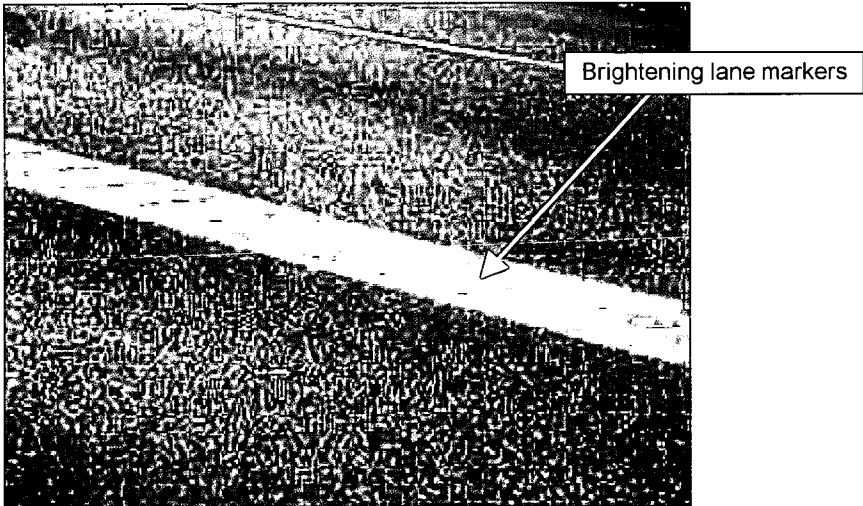


Installing a center zebra lane



* Top and bottom photographs: Kagoshima National Highway Office, National Highway 225, Kamifukumotocho, Kagoshima-shi, Kagoshima-ken (463106t)

Countermeasure name	(5) Installing guide lines (right turn and through traffic guide lines)	Purpose	Guiding vehicles
<p><Countermeasure locations> Locations of intersections with large surface area so that the driving courses inside the intersections are unstable</p>			
<p><Content of the countermeasure> Indicating courses that vehicles should travel inside an intersection with broken lines to stabilize the courses that vehicles follow. And clearly showing the locations where vehicles preparing to turn right wait for oncoming through vehicles to pass through (right turn stop lines) to keep right turn vehicles and through vehicles apart.</p>			
<p><Precautions> Because there are locations where the locations of guide lines are displaced from the actual driving course, when installing guide lines, they are installed in conformity with actual conditions so that drivers will not follow difficult courses.</p>			
<p><Major types of accidents targeted> Rear-end collision when a vehicle is turning right</p>			
<p><Countermeasure photographs></p> <div style="display: flex; flex-direction: column; align-items: center;">   </div> <p>* Top and bottom photographs; Hiroshima National Highway Office, National Highway 185, 4 Hondori, Kure-shi, Hiroshima-ken (343136k)</p>			

Countermeasure name	(6) Increasing the brightness of lane markings (producing vibration)	Purpose	Preventing lane departures and guiding drivers' line of vision
<p><Countermeasure locations></p> <p>Locations such as sharp curves where vehicles may stray into the oncoming traffic lanes</p> <p>Locations such as long straight road sections where drivers tend to drive inattentively or to fall asleep at the wheel.</p>			
<p><Content of the countermeasure></p> <p>Installing uneven protrusions on the surfaces of lines in the center of lanes and along the edges of lanes so that when the tires run on the lane markers, they make a noise that alerts the driver. The protrusions also guide the line of sight of drivers by reflecting the light from their headlamps at night and during rainy weather (when the road surface is wet).</p>			
<p><Precautions></p> <p>Because this measure causes noise along with vibration, it is necessary to make a complete study when implementing it in a residential district.</p>			
<p><Major types of accidents targeted></p> <p>Lane departure, head-on collisions, collisions when passing</p>			
<p><Countermeasure photographs></p> <div style="display: flex; flex-direction: column; align-items: center;">   </div>			
<p>* Top and bottom photographs: Nanbu National Highway Office, National Highway 58, Onna, Onna-son, Kunigami-gun, Okinawa-ken (473105t)</p>			

Countermeasure name	(7) Coloring road surface pavement	Purpose	Arousing attention
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<Countermeasure locations>

Locations such as steep curves where there is a high probability of accidents occurring frequently

<Content of the countermeasure>

Increase drivers' awareness of danger by arousing their attention by coloring the road surface pavement.

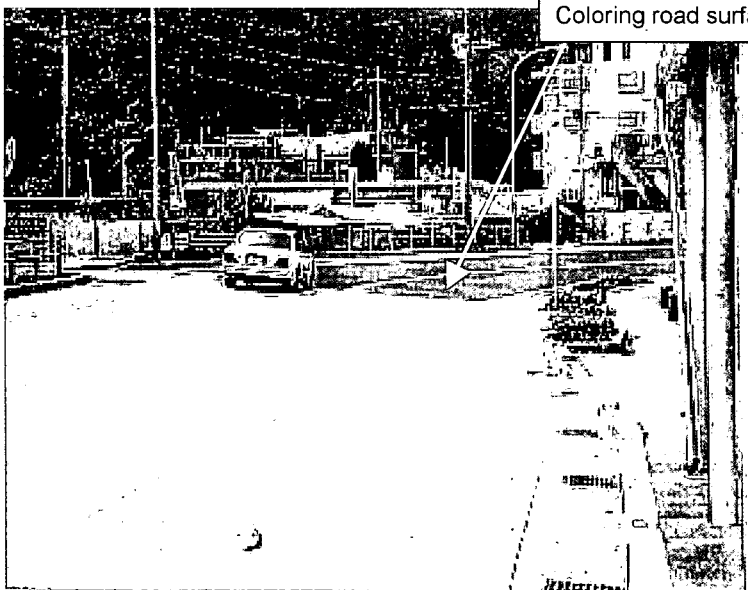
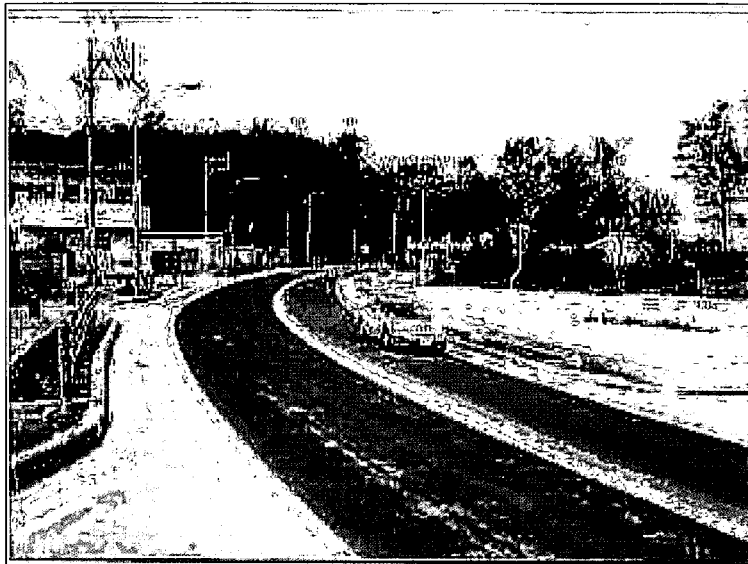
<Precautions>

At locations where traffic is heavy and locations where the view of the road ahead is obscured, even if the road surface pavement at a hazardous spot is colored, drivers do not notice this countermeasure on time. In this case, it should be taken in advance of the hazardous spot.

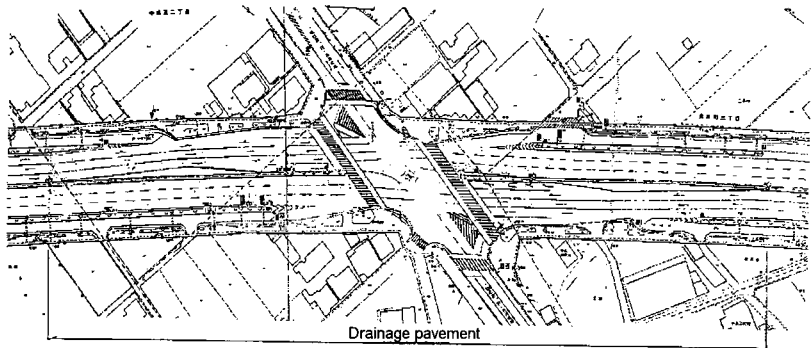

<Major types of accidents targeted>

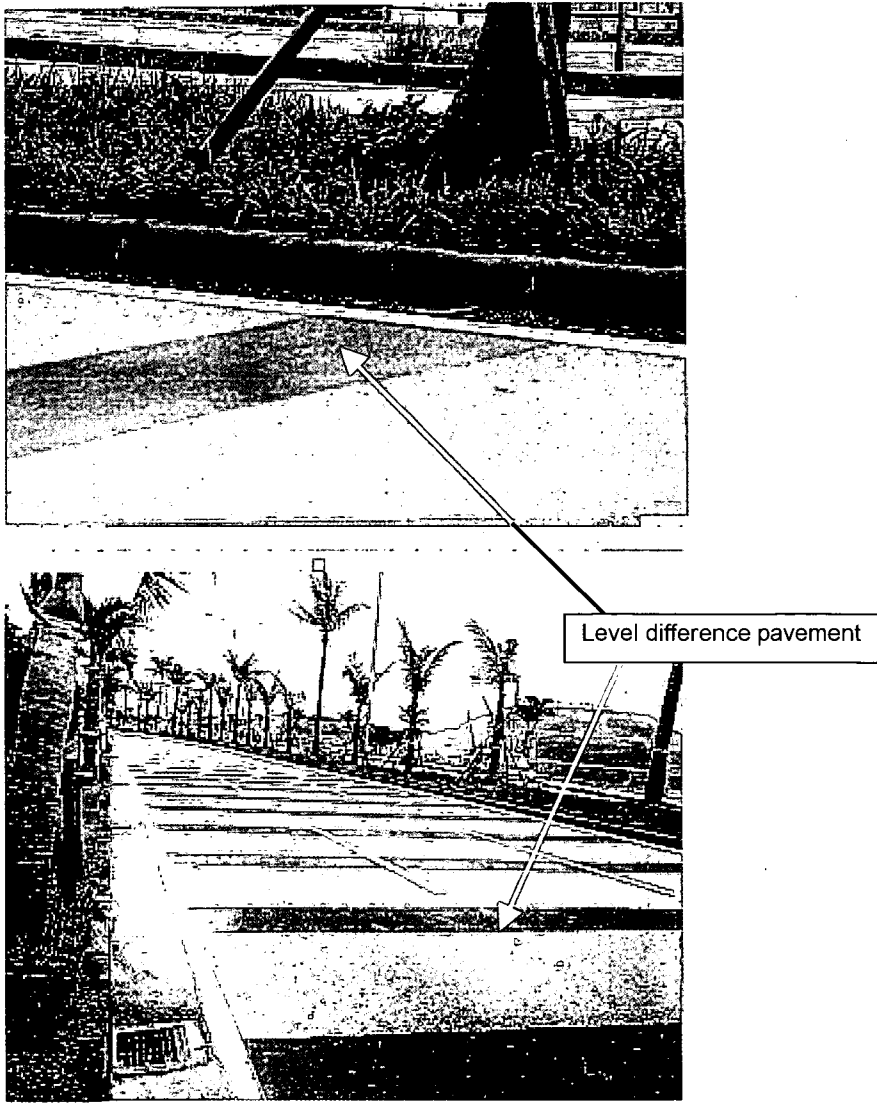
Head-on collisions caused by lane departures

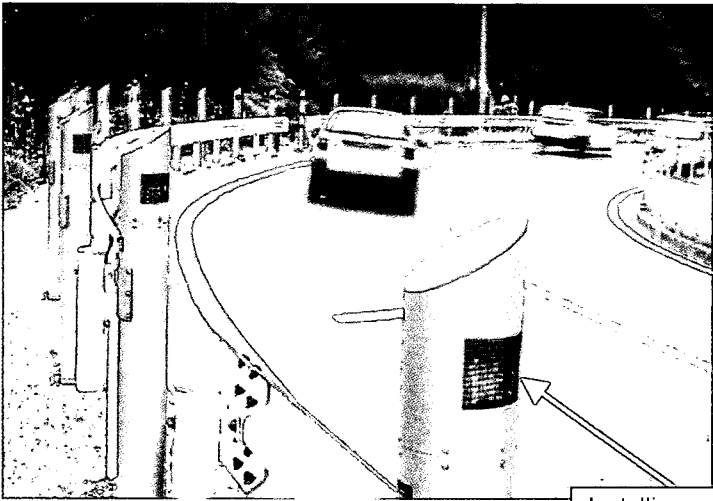

<Countermeasure photographs>



* Top and bottom photographs: Nanbu National Highway Office, National Highway 58, Nakama, Onna-son, Kunigami-gun, Okinawa-ken (473103t)

Countermeasure name	(8) Introducing drainage pavement	Purpose	Preventing puddles
<p><Countermeasure locations></p> <p>Locations where puddles form easily on the road surface and the pavement markings are difficult to see during rainfall</p> <p>Locations on long straight sections and others where spraying occurs easily because drivers travel at high speed</p>			
<p><Content of the countermeasure></p> <p>Drainage pavement has a surface course made of a pavement use asphalt mixture with a large void ratio that improves drainage properties to prevent the formation of puddles on the surface of roads during rainfall, thereby clarifying lane markers etc. by preventing puddles from reflecting the light of headlamps during the night and improving visibility by preventing spray during high speed traffic.</p>			
<p><Precautions></p> <p>There is a danger that plugging (by waste material etc.) of voids in drainage pavement may lower its performance so the road surface must be thoroughly maintained (cleaned etc.).</p>			
<p><Major types of accidents targeted></p> <p>Lane departures, head-on collisions, rear-end collisions</p>			
<p><Countermeasure photographs></p> <div style="text-align: center;">  </div> <div style="text-align: center; margin-top: 20px;">  </div>			
<p>* Photograph: Nagoya National Highway Office, National Highway 22, 3-chome, Nakashimadori, Ichinomiya-shi, Aichi-ken (233147k)</p>			

Countermeasure name	(9) Introducing level difference pavement	Purpose	Controlling speed and arousing attention
<p><Countermeasure locations> Locations on long descending grades where it is easy to drive too fast Locations such as long straight road sections where drivers tend to drive inattentively or to fall asleep at the wheel</p>			
<p><Content of the countermeasure> Installing thin protrusions on the road surface vibrates vehicles (drivers) arousing their attention and slowing their driving speed.</p>			
<p><Precautions> Because these thin layers of pavement cause noise along with vibration, it is necessary to make a complete study when implementing it in a residential-district.</p>			
<p><Major types of accidents targeted> Lane departures, head-on collisions, rear-end collisions</p>			
<p><Countermeasure photographs></p> <div style="text-align: center;">  </div> <p>* Top and bottom photographs: Nanbu National Highway Office, National Highway 329, Noguni, Kadena-cho, Nakagami-gun, Okinawa-ken (473101t)</p>			

Countermeasure name	(10) Installing self-illuminated line of sight guidance beacons	Purpose	Guiding drivers' line of sight and controlling their speed
<p><Countermeasure locations> Locations such as sharp curves where it is difficult to understand road alignment Locations where drivers travel at high speed even though it is a sharp curve</p>			
<p><Content of the countermeasure> Flashing line of sight guidance beacons (self-illuminated) along the flow of vehicles to show drivers the alignment on curves. Setting the speed of the flow of flashing lights at an appropriate speed also controls vehicle speed.</p>			
<p><Precautions> Sharply reducing the radius of a corner cut-off obstructs the smooth movement of vehicles turning left, cutting the traffic capacity of the intersection.</p>			
<p><Major types of accidents targeted> Head-on collisions caused by lane departures</p>			
<p><Countermeasure photographs></p> <div style="display: flex; flex-direction: column; align-items: center;">  <div style="border: 1px solid black; padding: 2px; margin: 5px 0;">Installing self-illuminated line of sight guidance beacons</div>  </div> <p>* Top and bottom photographs: Shizuoka National Highway Office, National Highway 1, from 246 Saruyama, Sasaharashinden to 339-3 Kurasawa, Tsukaharashinden in Mishima-shi, Shizuoka-ken (223103t)</p>			

Countermeasure name	(11) Enlarging signal lights	Purpose	Improving visibility and arousing attention
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<Countermeasure locations>

Locations where signals are easily overlooked
 Locations where bad driving actions such as ignoring signals is seen

<Content of the countermeasure>

Installing larger signals lights than normal increases visibility of the signals and emphasizes the priority right to advance (end of the red signal, etc.) to arouse the attention of drivers.

<Precautions>

Generally the green, yellow, and red signal lights are enlarged, but there are cases where only the red signal lights are enlarged.

<Major types of accidents targeted>

Intersection collisions, rear-end collisions

<Countermeasure photographs>



Enlarging signal lights



* Top and bottom photographs: Gifu National Highway Office, National Highway 258, Wagoshinmachi, Ogaki-shi, Gifu-ken (213175t)

Countermeasure name	(12) Moving a crosswalk forward	Purpose	Improving visibility
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<Countermeasure locations>

Locations such as intersections with poor visibility where it is difficult for drivers of vehicles turning right to check for people crossing in the crosswalk.

<Content of the countermeasure>

Shifting a crosswalk towards the center of the intersection improves the ability of drivers turning left and turning right to see pedestrians crossing in the crosswalk.

<Precautions>

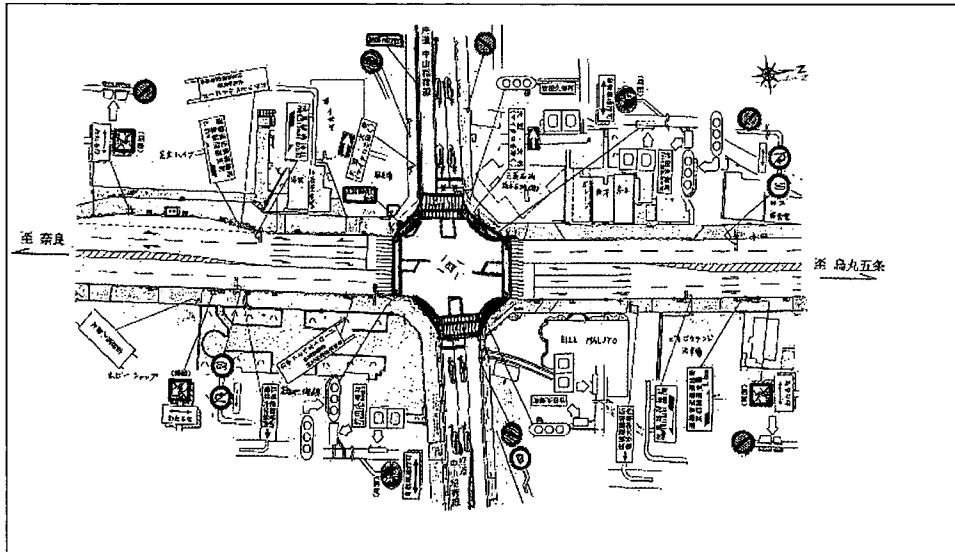
There is concern that if the crosswalk is moved forward to far, when a left turn vehicle is waiting for pedestrians to cross before turning left, it will hold up vehicles following it.

And because there is also concern that because the place where the driver of a vehicle turning left or right first sees pedestrians is close to the place where the vehicle must be stopped, drivers will be unable to stop safely after first seeing pedestrians, colliding with them. For these reasons, crosswalks must not be moved forward very far.

<Major types of accidents targeted>

While a pedestrian is crossing a crosswalk when a vehicle is turning left

<Countermeasure photographs>



Moving a crosswalk forward

* Photograph: Kyoto National Highway Office, National Highway 24, Takedakubocho, Fushimi-ku, Kyoto-shi, Kyoto-fu (263306k)