

Module Six Transparencies

Information Processing: Complex Risk Environments

Topic 1 -- Characteristics of Expressways

Topic 2 -- Entering, Changing Lanes, and Exiting

Topic 3 -- High Speed Considerations

Characteristics of an Expressway



- ✓ **Controlled access (limited entry and exit)**
- ✓ **High speed (up to 65 mph)**
- ✓ **Divided by a barrier or median**
- ✓ **Multiple lanes**
- ✓ **May have minimum speed limit**
- ✓ **Only for motorized vehicles**

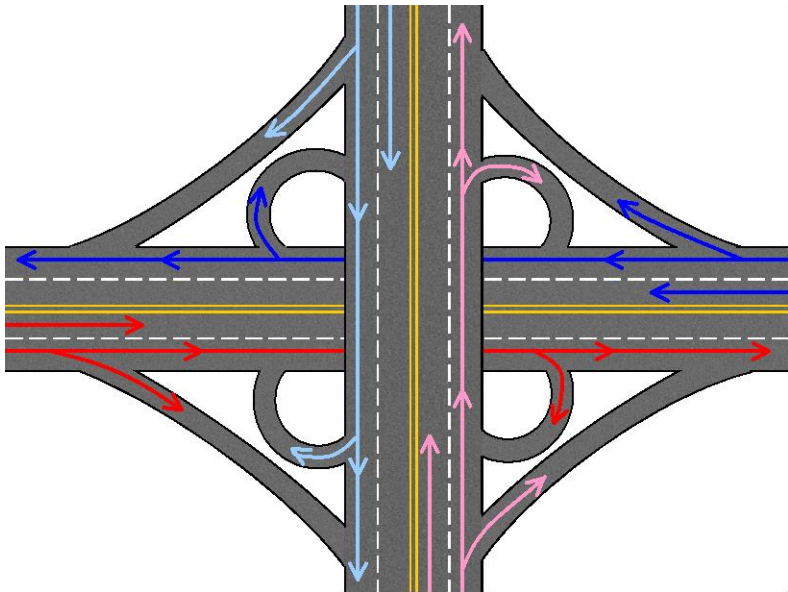
Cloverleaf Interchange



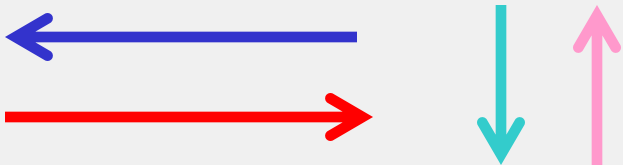
A *cloverleaf interchange* has a series of entrance and exit ramps that resemble the outline of a four leaf clover.

This design

- allows for the interchange of two expressways or major roadways.
- has shared entrance and exit weave lanes.



Traffic is permitted to move **ONLY** in the direction indicated by the arrows.



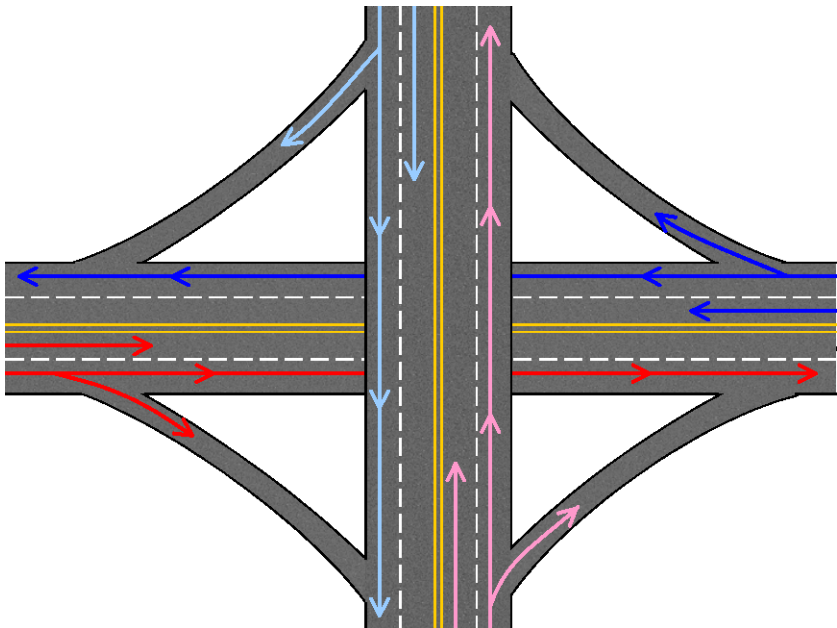
Diamond Interchange



A diamond interchange is designed to be used when a road with slower speeds crosses a busy expressway.

This design allows:

- for the interchange of a major roadway with a secondary dual or multiple lane roadway.



Traffic is permitted to move **ONLY** in the direction indicated by the arrows.



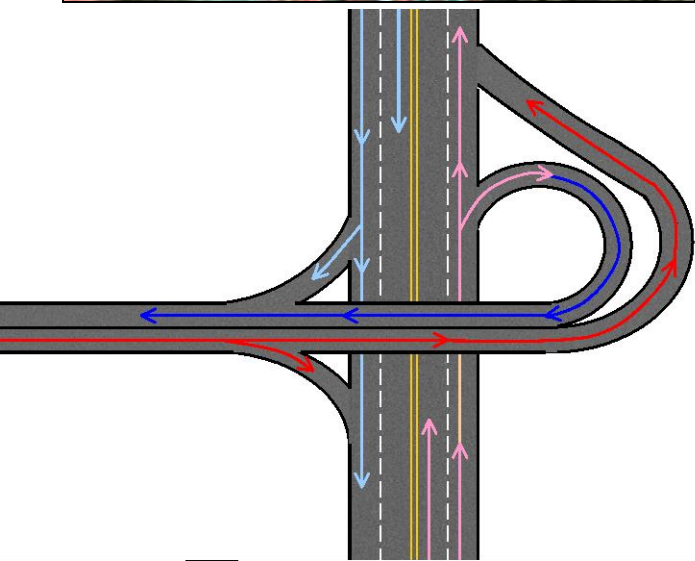
Trumpet Interchange



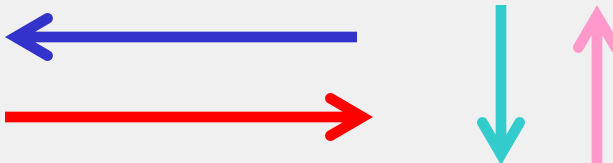
A trumpet interchange is used when an intersecting side road forms a T intersection with the expressway.

This design:

- accommodates the T-intersection flow of traffic at the junction of two roadways.
- allows for traffic on a secondary two-way street to merge onto a multiple lane roadway.



Traffic is permitted to move **ONLY** in the direction indicated by the arrows.



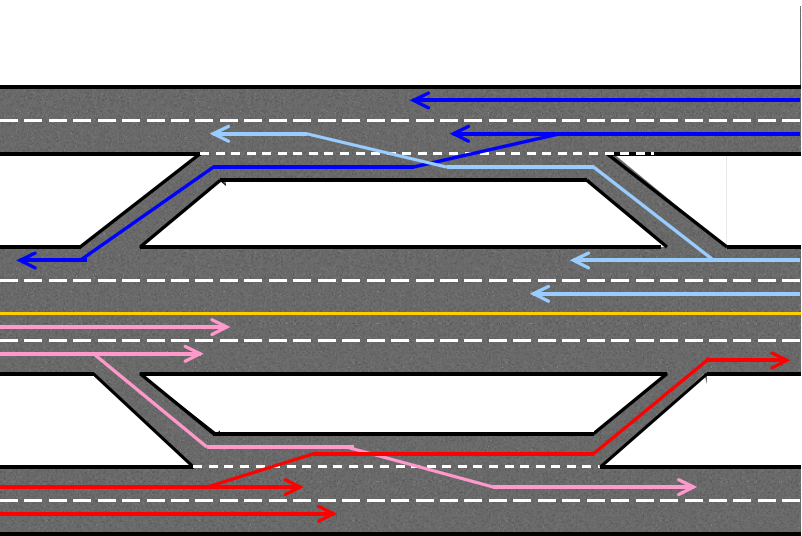
Frontage Road Interchange



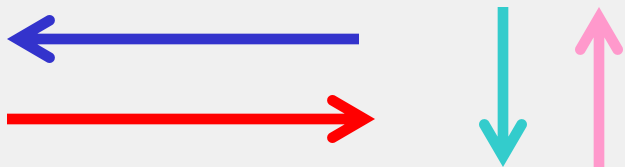
Frontage Road Interchanges allow vehicles using parallel secondary two-way or one-way roadways to merge onto a major multiple lane roadway.

This design allows:

- drivers to exit a multiple lane roadway and use the parallel frontage road.
- secondary road traffic flows to mix efficiently with higher speed traffic flows on the multiple lane roadway.



Traffic is permitted to move **ONLY** in the direction indicated by the arrows.

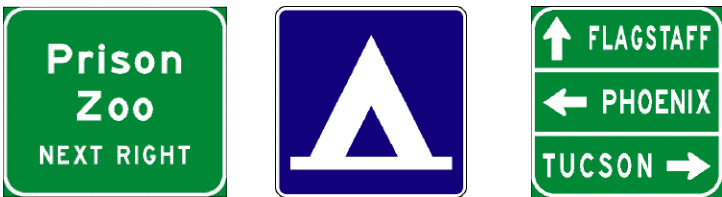


Common Expressway Signs

Interstate signs



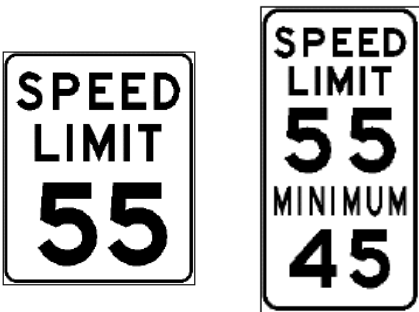
Guide signs



Warning signs



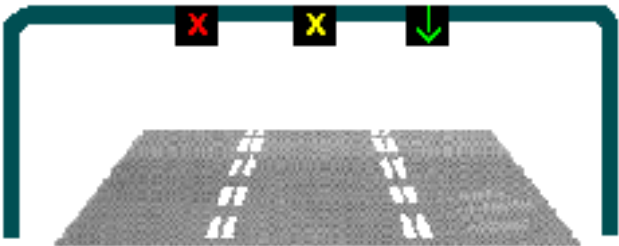
Speed limit signs



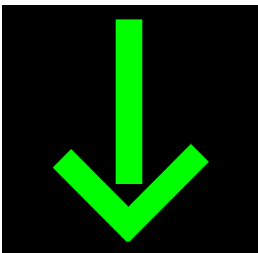
A major contributor to your decision as to how you will maintain a safe path of travel, proper lane position, and your lane choice, is based on the information provided by the road signs and lane markings.

Common Expressway Signals

Lane Signals



Reversible
lane signals



A **GREEN arrow** over a lane — the lane is open for travel.



A **RED “X”** over a lane — travel in that lane is closed or prohibited.

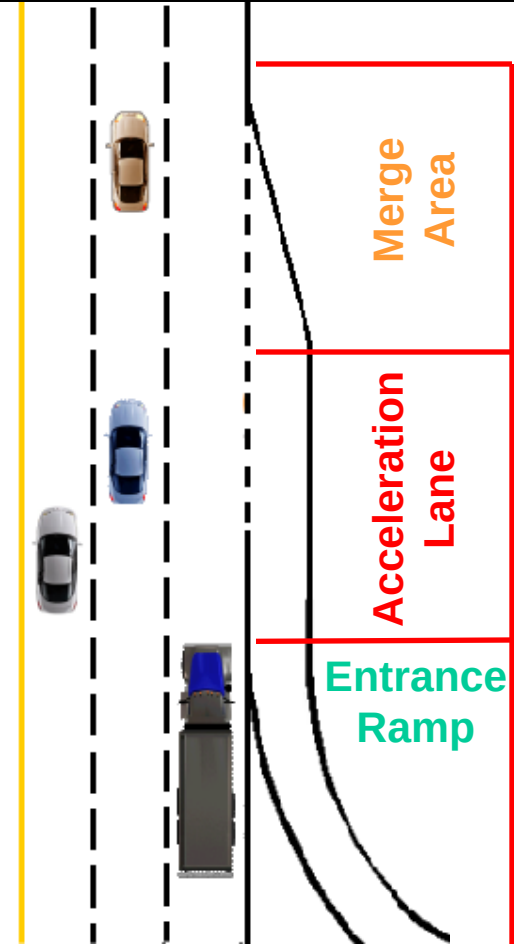


A **YELLOW “X”** over a lane — travel in that lane is about to change or close.

Entrance Ramps



Entrance ramps provide one-way directional access to an expressway.



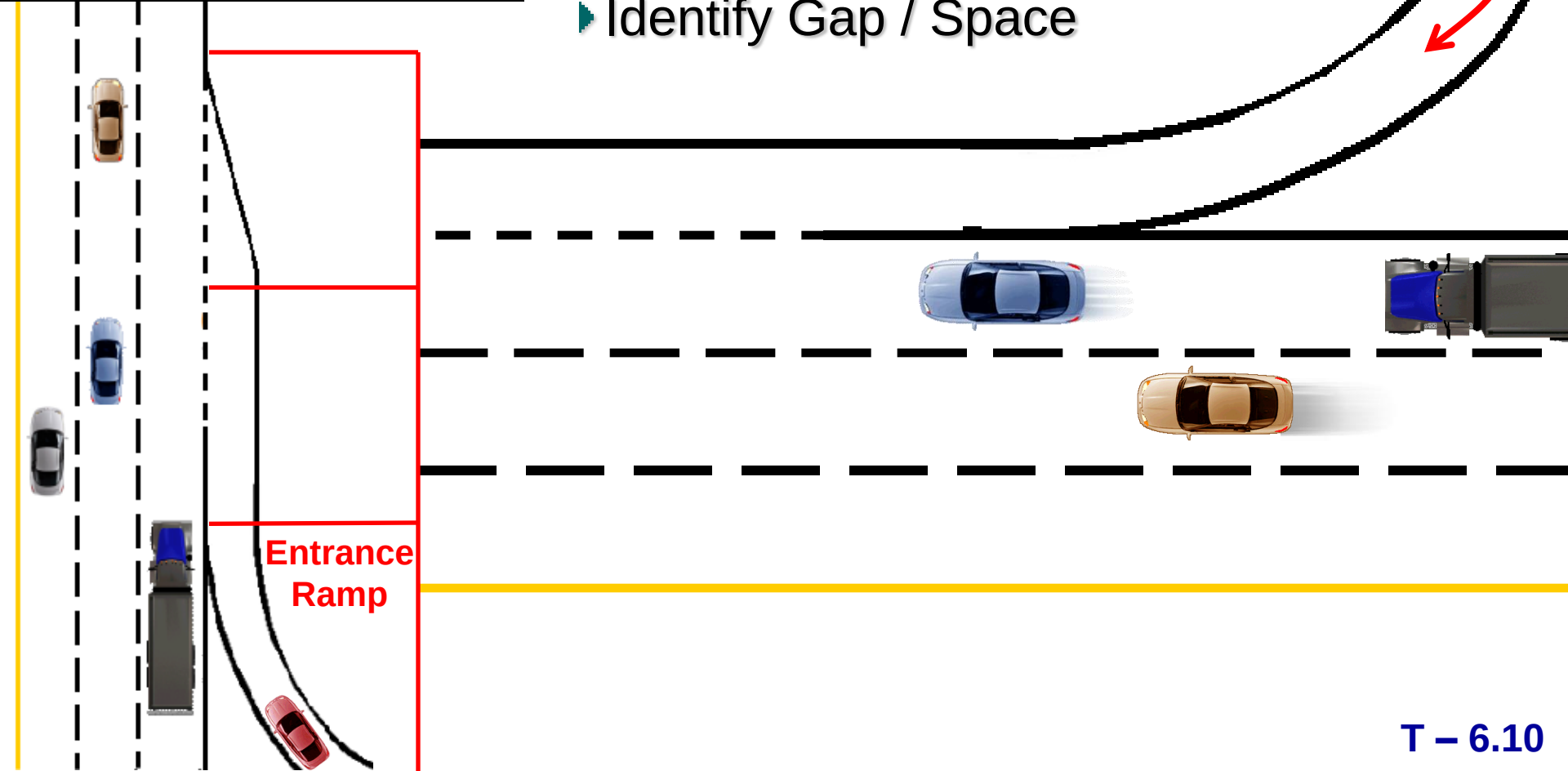
The ramp is divided into three sections:

- 1. **The Entrance or Access Ramp** — gives the driver time to begin evaluating traffic conditions.
- 2. **The Acceleration Lane** — allows a driver to adjust vehicle speed to the speed of traffic on the expressway.
- 3. **The Merging Area** — allows the driver to merge onto the expressway.

Entering the Entrance Ramp



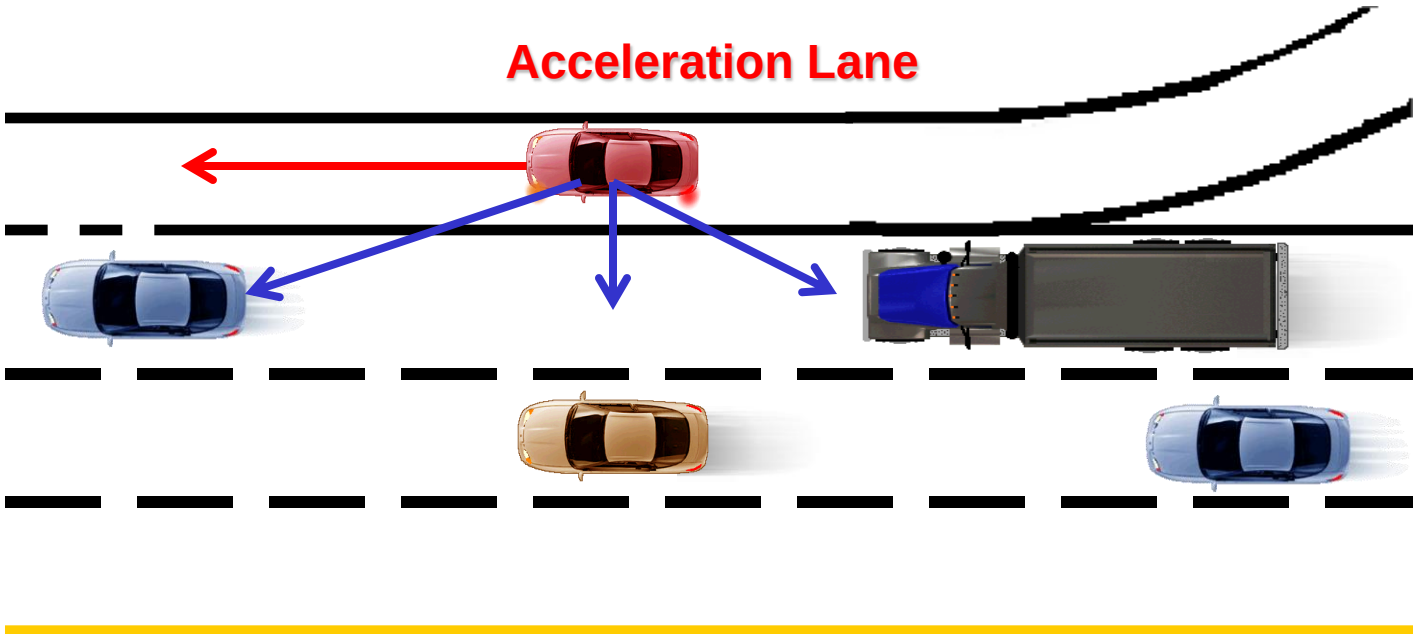
- ▶ Enter the Entrance Ramp
- ▶ Begin Searching for a Gap / Open Space
- ▶ Identify Gap / Space



Acceleration Lane



- Use the left-lane signal indicator
- Adjust speed to match the speed of the traffic on the expressway
- Monitor gap on expressway

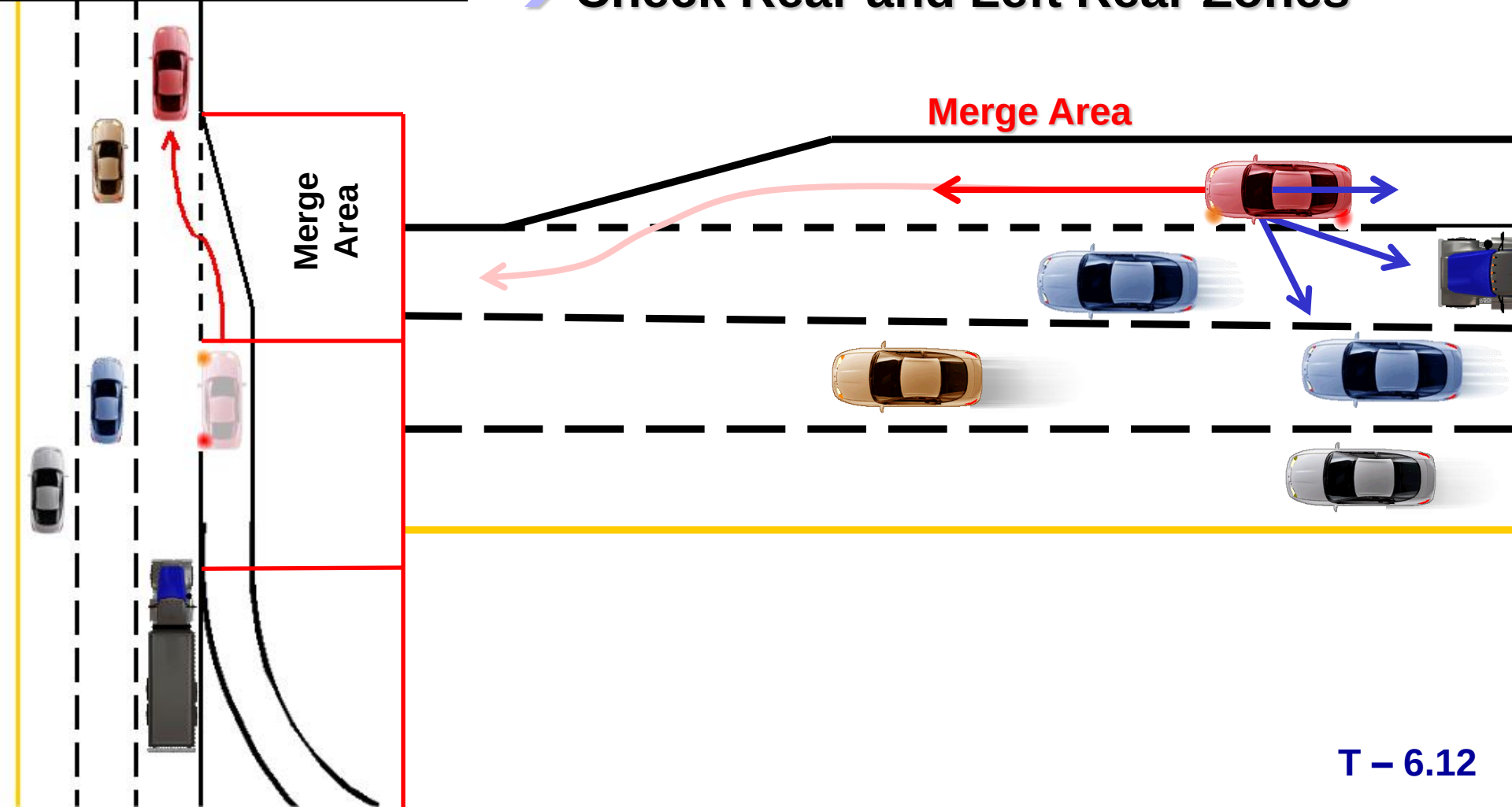


Entering Merge Area



➔ Accelerate to blend with the speed of traffic on the expressway

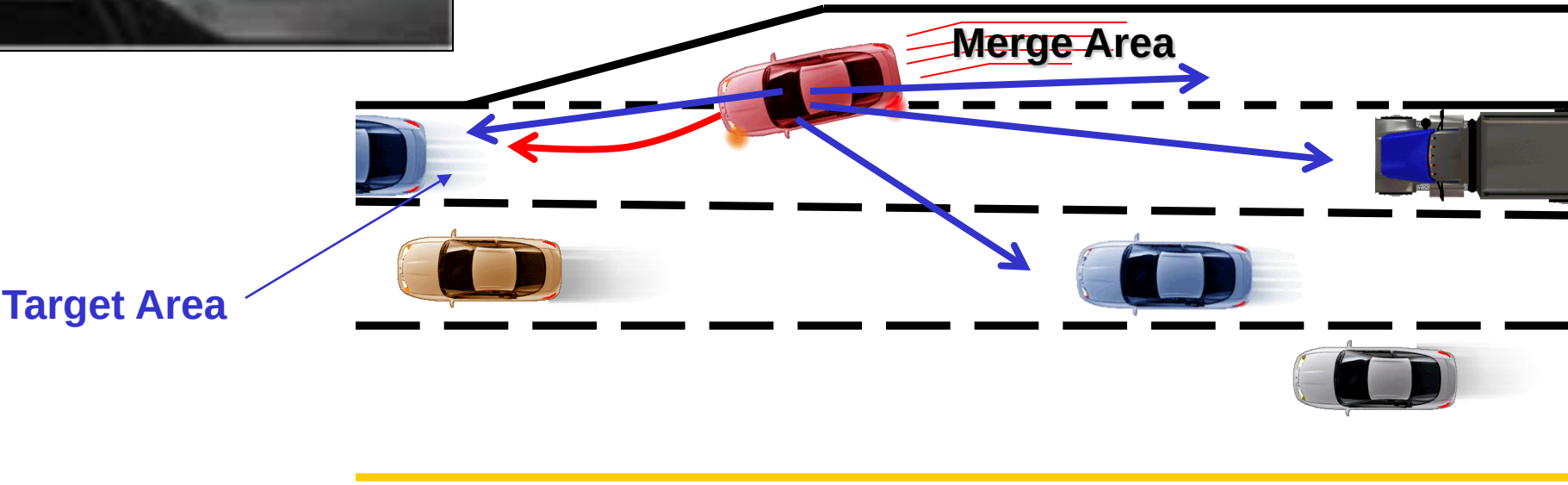
➔ Check Rear and Left Rear Zones



Selecting a Gap in Traffic

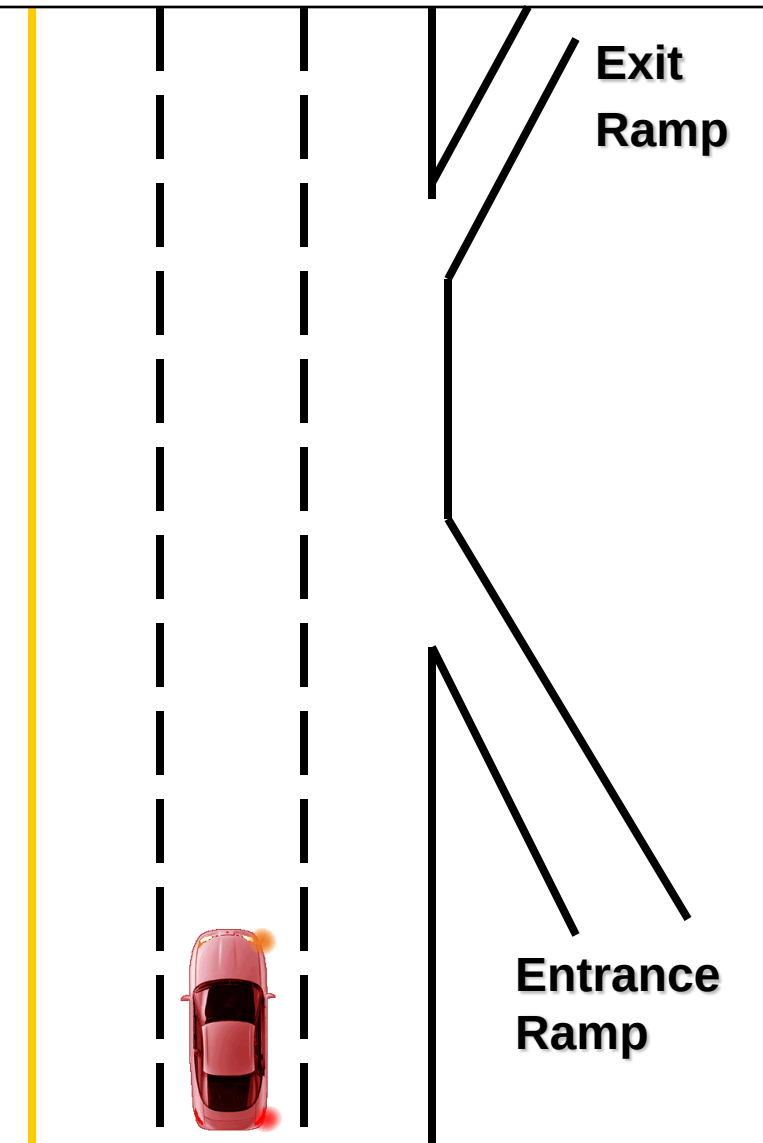


- ✓ Check Front Zone
- ✓ Check Rear and Left Rear Zones
- ✓ Select Gap
- ✓ Identify a Target Area in the Open Space



Reduced Risk Lane Changes

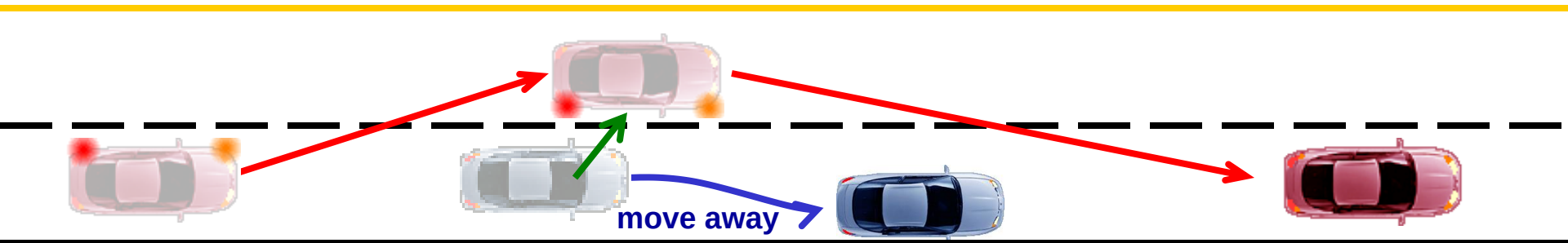
Reasons for changing lanes include:



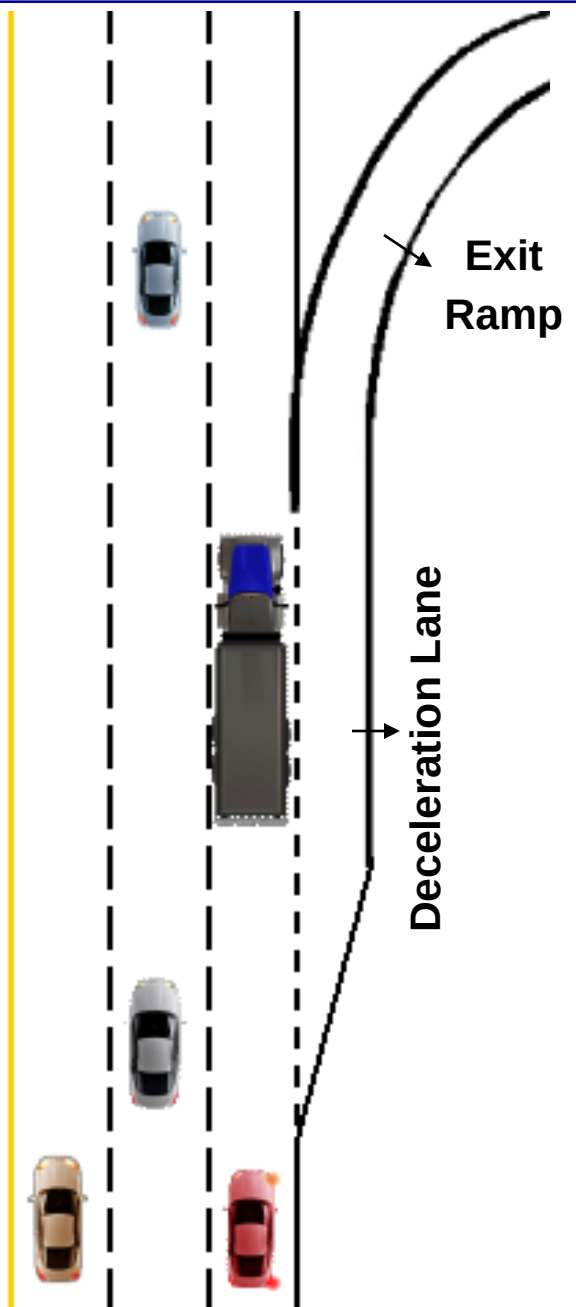
- ✓ Entering or exiting
- ✓ Allowing another driver to enter
- ✓ Following large or slow-moving vehicles
- ✓ Lane ahead becomes blocked
- ✓ Being tailgated
- ✓ Animals
- ✓ Passing

When Being Passed

- ➡ Monitor passing vehicle's position
- ➡ Move to lane position 3 to increase space cushion
- ➡ Do not increase speed—decelerate if necessary
- ➡ Once passed, create space ahead and behind



Multiple Lane Roadway Exit



An expressway exit has two components:

- 1. The Deceleration Lane** — gives the driver the time and space needed to adjust his/her vehicle's speed to the slower posted ramp speed without disrupting the flow of traffic on the expressway.
- 2. The Exit Ramp** — allows traffic to enter an adjoining roadway.

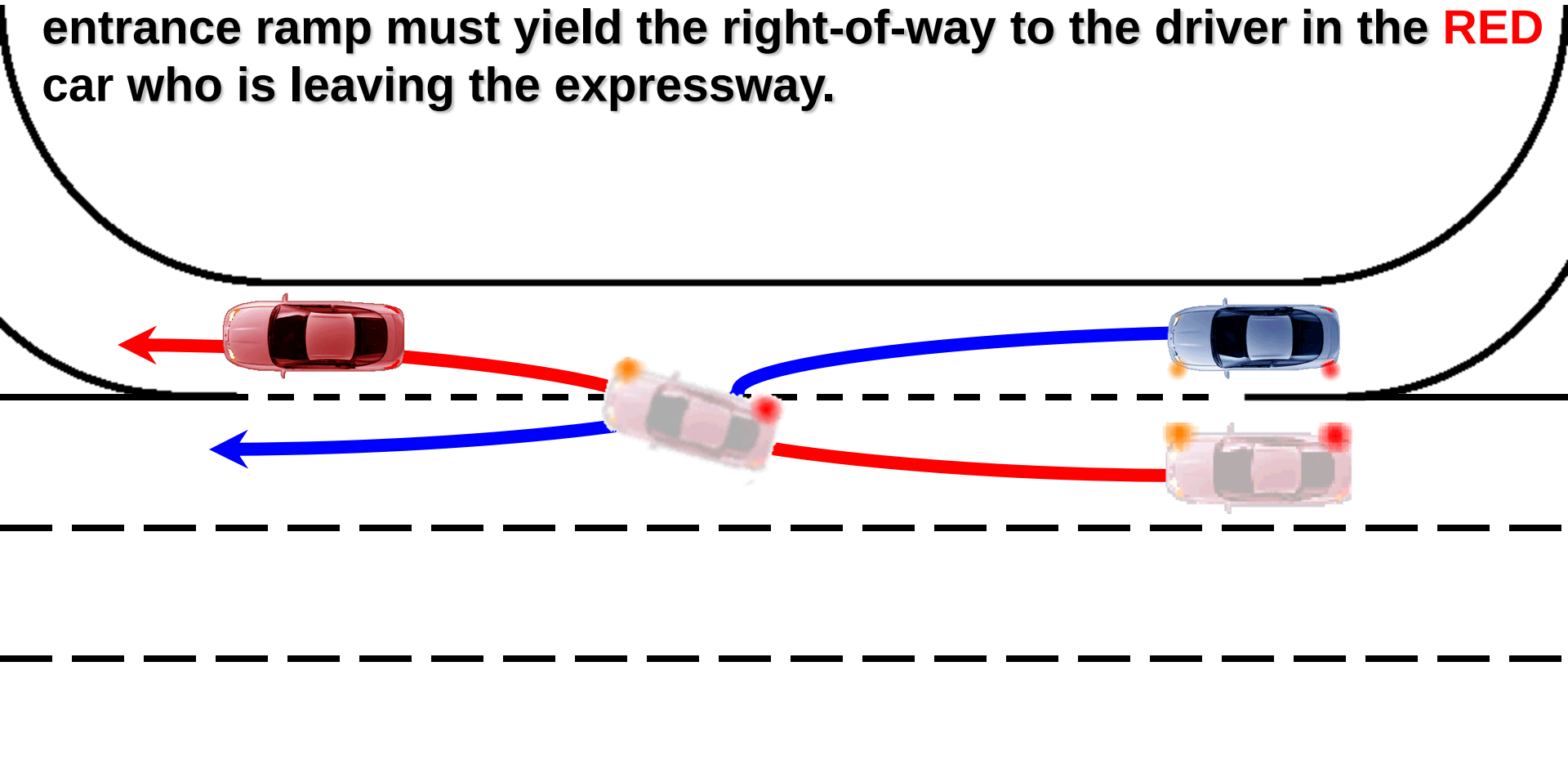
Identify the **Exit** Early



- Exits are marked with guide signs, usually one to two miles before the exit.
- You can determine if an exit is a right exit or a left exit by the position of the exit number on the sign. So, Exit 45A is a right exit, because in this picture the exit number on the upper right-hand side of the sign.
- In Virginia, exit numbers correspond with mile marker numbers.
- About one-half mile (20- to 30-seconds) before the exit, signal and move to the lane closest to the deceleration lane.

Weave Lane

- Traffic entering and exiting the expressway uses the same lane.
- **To avoid a conflict**, the driver in the **BLUE** car entering from the entrance ramp must yield the right-of-way to the driver in the **RED** car who is leaving the expressway.



On the Expressway...



Do Not:

- ✓ Drive over or across the median or yellow painted line.
- ✓ Make a left turn or a U-turn on crossovers (designed for emergency vehicles only).
- ✓ Use the left lane except for passing.
- ✓ Change lanes without signaling and checking for an adequate gap in traffic.

On the Expressway...



Do Not:

- ✓ Drive onto an expressway except from an on-ramp.
- ✓ Park or Stop on an expressway shoulder unless you have an emergency or mechanical difficulties.
- ✓ Backup.
- ✓ Walk or ride a bike.

Highway Hypnosis



Is a dulled or drowsy condition that can occur when driving long distances

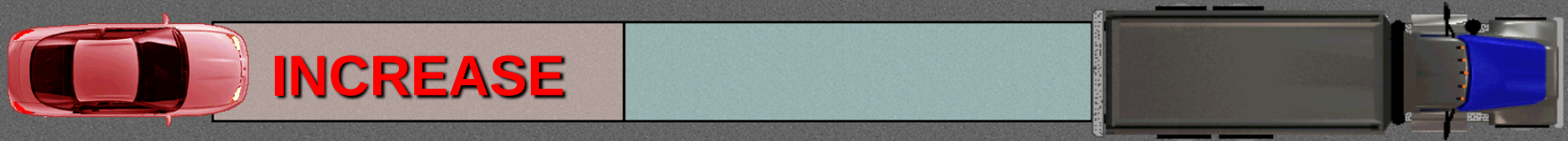


Situation becomes worse when the driver's eyes focus on the center line.



Plan breaks and rest stops to combat highway hypnosis or go to a safe area for rest or sleep when tired.

Increase Following Distance



- When following large trucks or buses
- When following motorcycles
- When driving in bad weather
- When being tailgated
- When driving with a heavy load or pulling a trailer
- When entering/exiting the expressway



Special Roadway Conditions

Expressways through cities

- Avoid driving in the right lane when vehicles are merging
- Search for signs, signals, and roadway markings
- Search for exits early and adjust position in adequate time to exit safely
- Don't make last minute lane changes to gain access to an exit
- Monitor the zones around your vehicle and adjust position to create space cushions



Disabled vehicles

- Don't be a "rubber necker"
- Give the disabled vehicle plenty of room
- Pull as far off the roadway as possible if your vehicle becomes disabled



Special Roadway Conditions

Construction areas

Use caution when approaching:

- ✓ Search ahead for warning signs.
- ✓ Reduce your speed.
- ✓ Adjust position to maintain a space around your vehicle.



Toll booths

- ✓ **Exact change booths** — The driver deposits coins (exact change) into a machine.
- ✓ **Attendant operated booths** — For large vehicles or drivers without exact change.
- ✓ **Electronically operated booths** — For drivers with prepaid accounts (Smart Tag).



When exiting a toll-booth plaza, search traffic to both sides for open space, accelerate smoothly, and adjust speed to blend with the flow of traffic.