

Be Ready, Be Safe, Be Responsible

VIII. DRIVING ENVIRONMENTS & THEIR CHARACTERISTICS

Lessons and Hints to Work With Your New Teen Driver

Expressway/Limited Access Highways

Part 8



Lessons and Hints to Work With Your New Teen Driver

- This resource is based on a behind the wheel program that is used by trained driver education teachers.

Purpose :

- to give adults supervising practice driving with a teen driver, an orderly, standard routine.
- To provide objectives and methods similar to those used by in-car driving instructors that may:
 - reduce stressful situations for adult and teen.
 - reduce risk by allowing the teen driver to gradually progress through skill levels and driving environments.

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LESSON BENEFITS

- This lesson will give you an opportunity to experience the high-speed, multi-lane characteristics of the expressway / limited access highways under protected, controlled conditions.

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EXPRESSWAYS & LIMITED ACCESS HIGHWAYS

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EXPRESSWAY CHARACTERISTICS

Lesson Objectives and Skill Sets

• Objectives

- Maintaining a constant speed when conditions permit
- Entering and exiting expressways
- Cooperating with other drivers who are entering or exiting
- Demonstrate satisfactory scanning habits
- Demonstrate satisfactory communication
- Passing

• Learning Sets

- Entering and exiting controlled access highway
- Measuring distance with time
- Speed control
- Cooperating with other drivers
- Passing slower moving vehicles

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EXPRESSWAY CHARACTERISTICS

Traffic - light to heavy volume

Speeds - posted 65-70 mph

Lanes - multiple travel lanes

- 2 or more, one direction

Limited access & exit

- by way of interchanges
- merges & exits - from right and left
- weave lane (shared exit and entrance)

No intersections

- Physical directional barrier separates lane direction:

Median strip, Jersey barriers, etc.

Signs, signals, markings

- Green guide signs for exits, distances to exits & locations
- Yellow warning signs-merges, curves, ramp speeds
- Speed limit signs
- Lane use signals
- Entry metering
- Electronic message signs
- Lane Markings

White center lines & right edge lines

Yellow left edge lines

Merge & exit lines

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OTHER USERS

- Trucks, trailers, buses, and other large vehicles add additional challenges to driving on multiple lane roadways.
- Large and slow-moving vehicles have inconsistent speeds when driving uphill and downhill
- Large vehicles may provide a wind blast that can move smaller vehicles when passing.
- Motorcycles may quickly change lanes, enter, approach or veer suddenly.

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ENTERING



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ENTERING

ENTERING EXPRESSWAYS:

When entering an expressway, you will usually find an:

Entrance Lane

- One or two lanes
- Chevrons to guide around curve
- Suggested safe speed for curve

Begin searching highway for:

- amount of traffic
- speed of traffic
- gaps to enter

Acceleration lane

- Allows you to gain the speed necessary before merging.
 - You should signal and look for an opening in the traffic,
 - match traffic speed and
 - merge with traffic when safe.
 - gap selection

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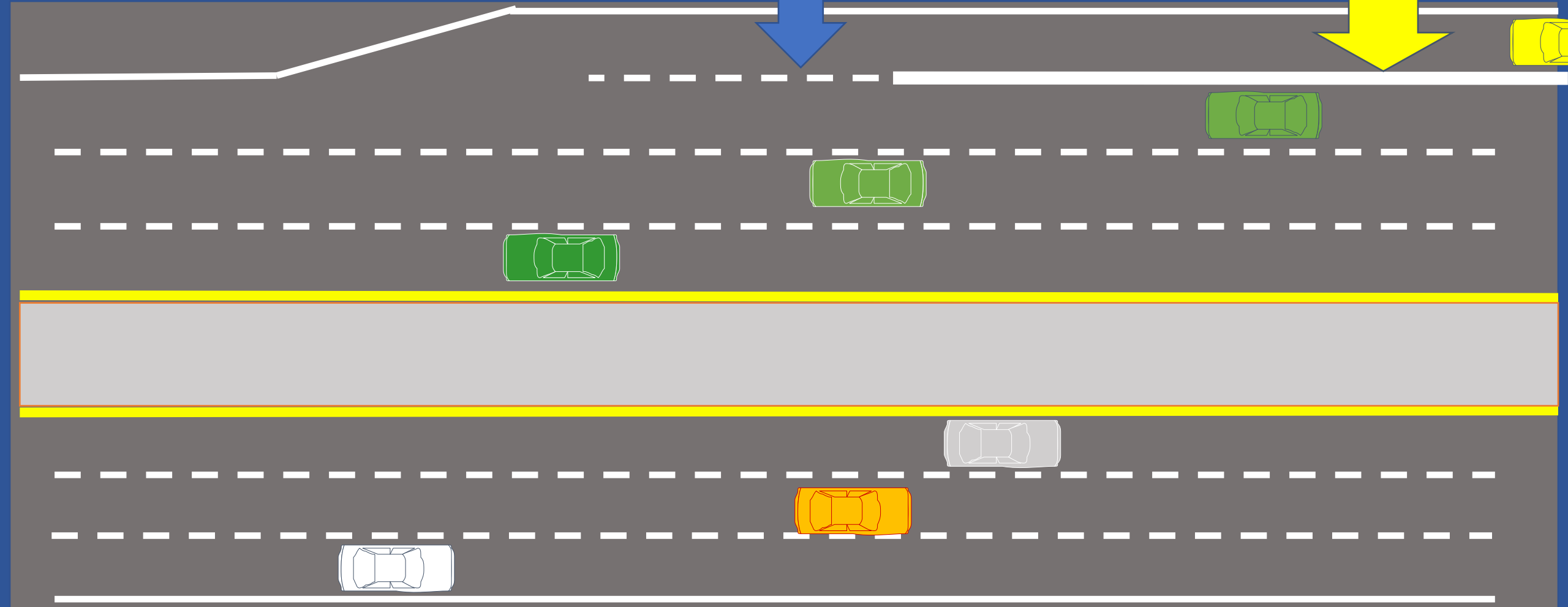
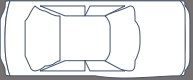
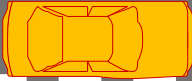
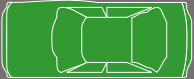
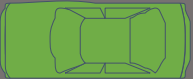
Animation

ENTRANCE RAMPS

Merge Area

Acceleration Lane

Ramp Entry

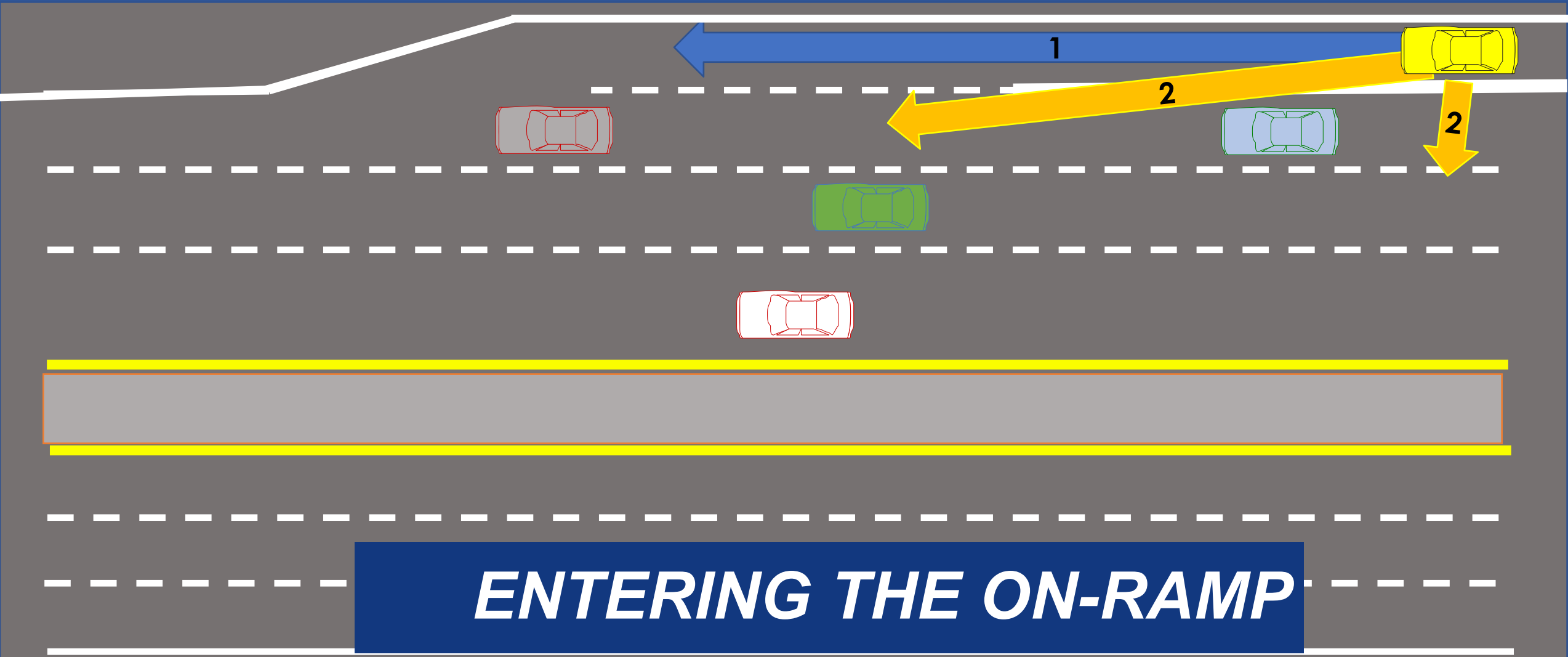




Animation

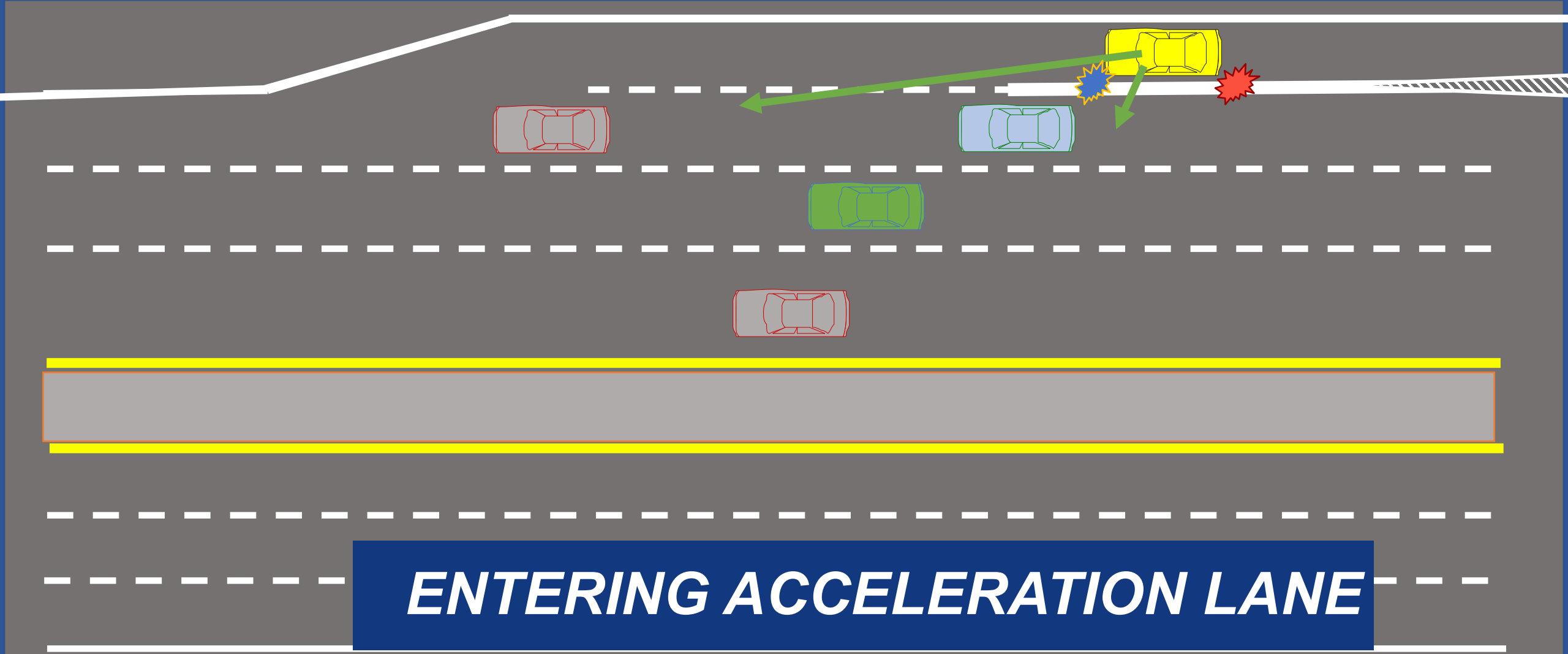
Step One

1. Check the Access Ramp
2. Search for Gap / Open Space



Step Two

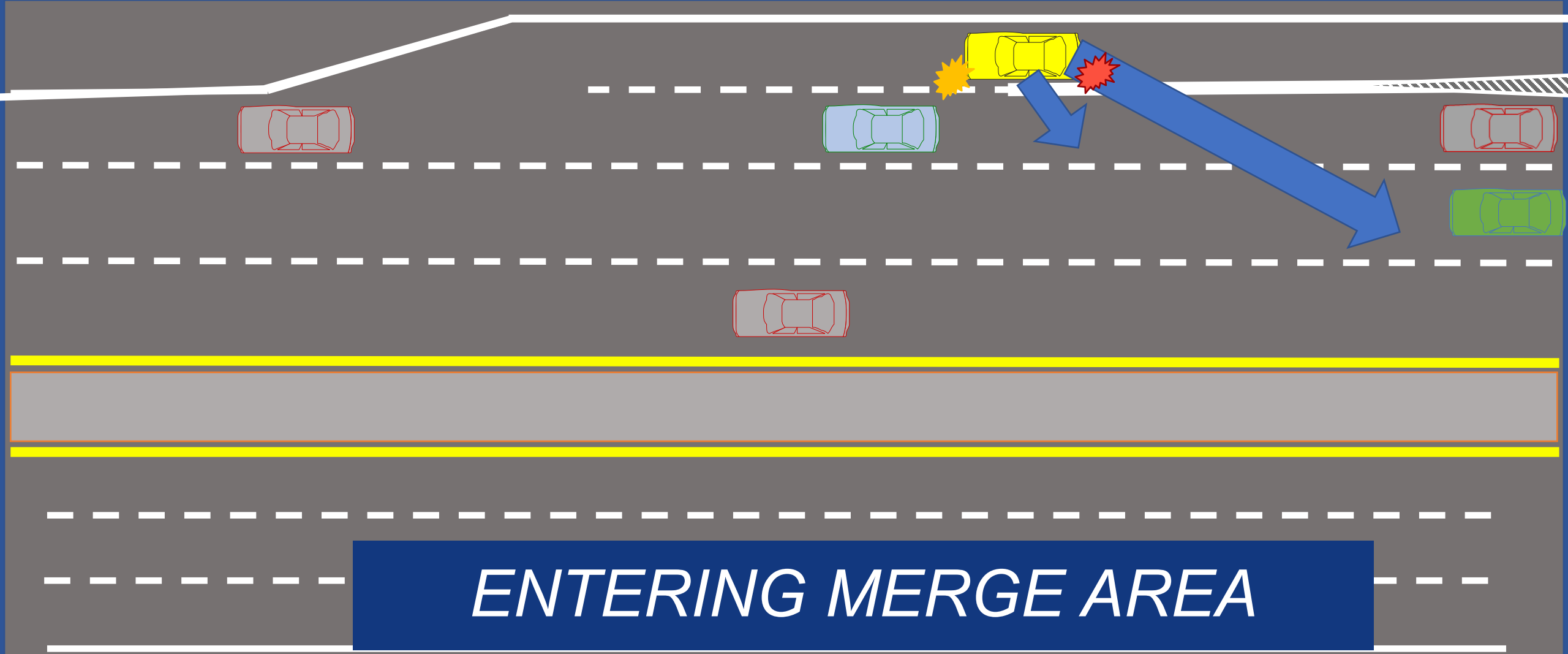
1. Use turn signal (left).
2. Adjust speed
3. Re-check for gap on freeway



ENTERING ACCELERATION LANE

Step Three

1. Begin Acceleration
2. Check Rear Zone and Left Rear Zone



ENTERING MERGE AREA

Step Four

3. Accelerate to Speed

3.

4. Mirror Checks

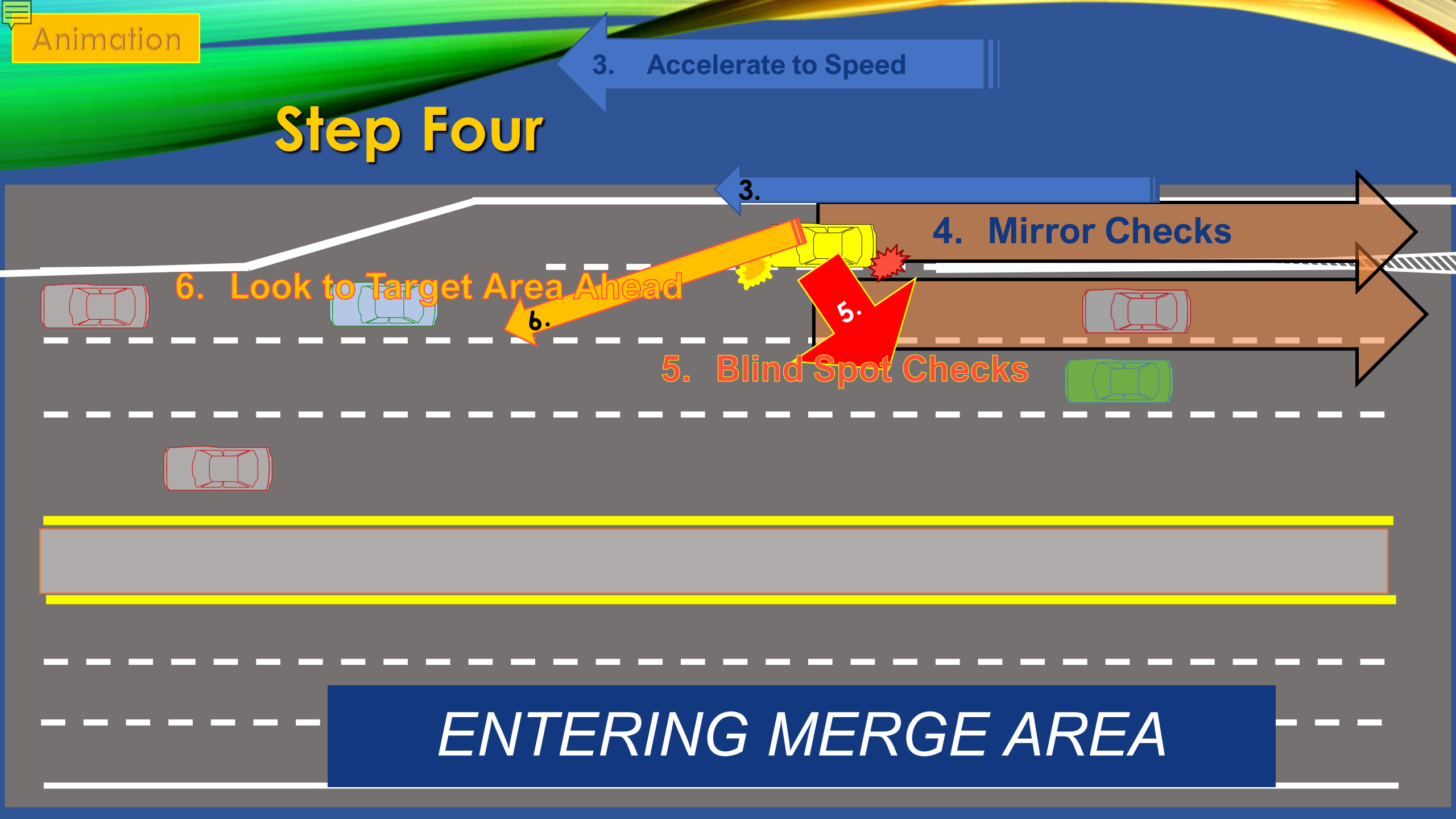
6. Look to Target Area Ahead

6.

5.

5. Blind Spot Checks

ENTERING MERGE AREA



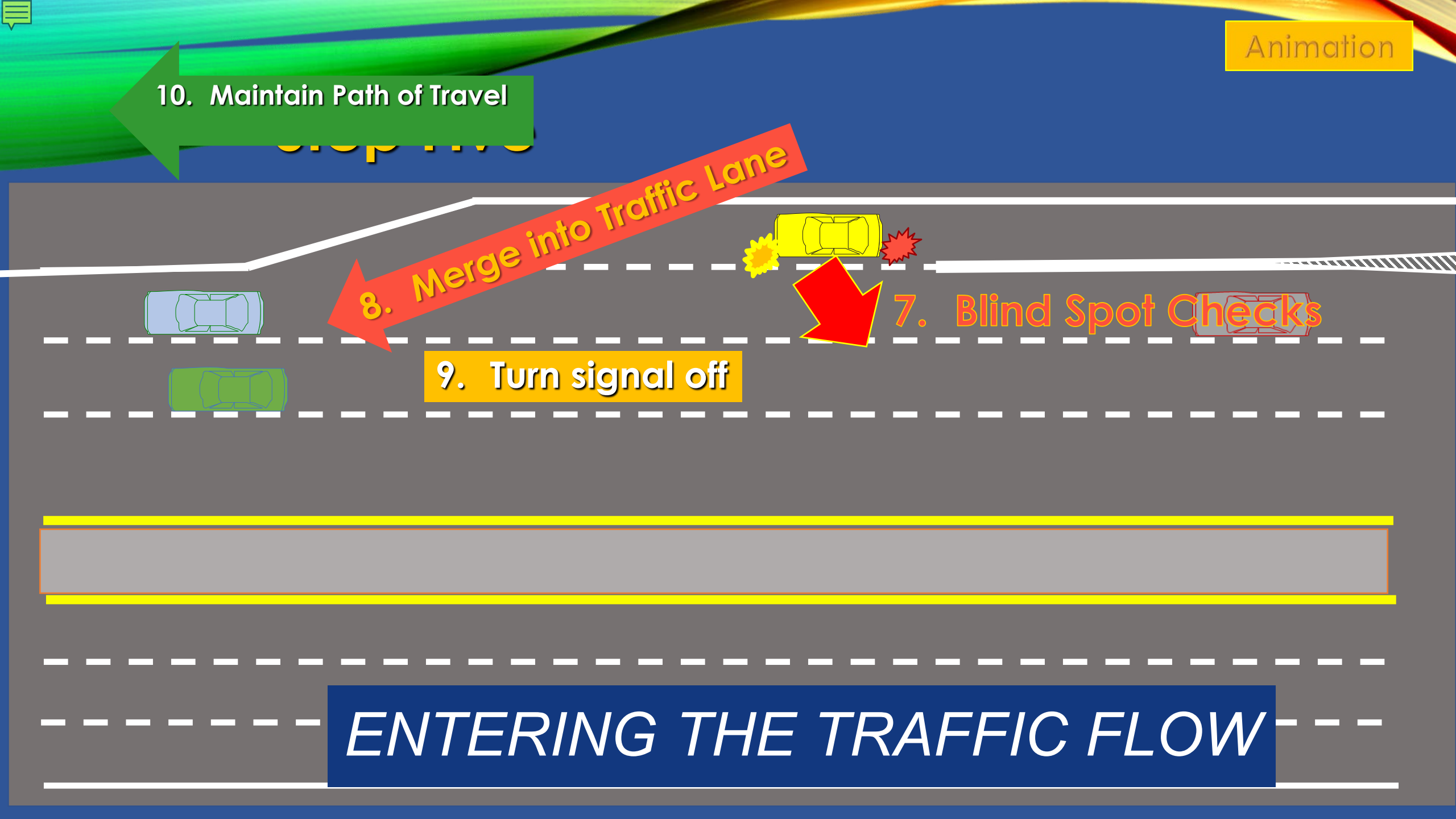
10. Maintain Path of Travel

8. Merge into Traffic Lane

9. Turn signal off

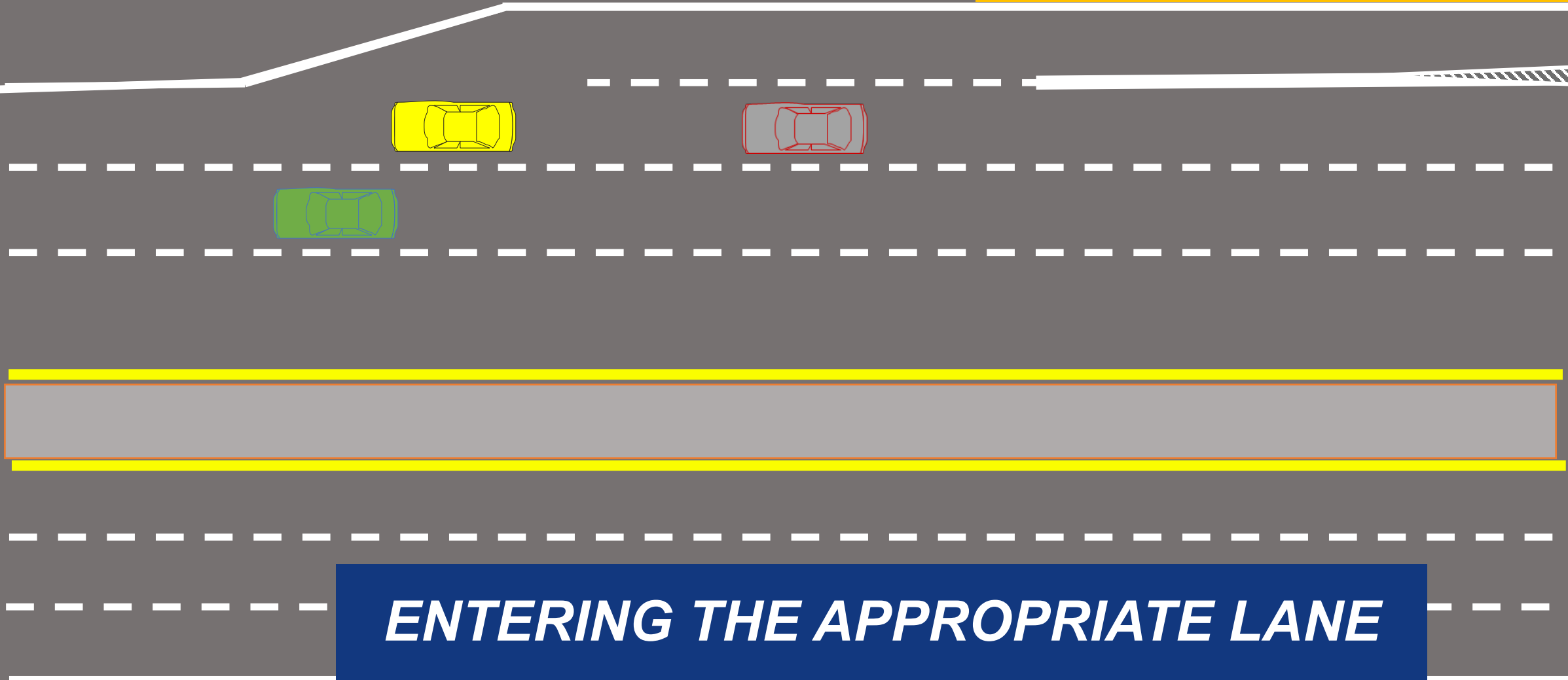
7. Blind Spot Checks

ENTERING THE TRAFFIC FLOW



Step Six

- Center Vehicle in Proper Lane
- Adjust Speed to Traffic Flow and Law



ENTERING THE APPROPRIATE LANE

ENTERING-MERGE FROM LEFT



video

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ENTERING-MERGE FROM RIGHT



video

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EXPRESSWAY DRIVING

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ON THE ROADWAY... DO NOT

- Drive onto freeway except through an on-ramp.
- Park or Stop on the freeway, except at areas provided.
- Park on shoulder unless you have an emergency.
- Back up

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ON THE ROADWAY... DO NOT

- Drive over or across median, yellow painted line, or raised dividing section
- Make a left turn or a U-turn
- Use left lane except for passing, anticipating an exit on the left, or steering clear of emergency vehicles and hazards on the shoulder
- Change lanes without signaling and checking for an open gap

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MANAGING SPACE

Use these guidelines to manage space on multiple lane roadways:

- Use a minimum four-second following distance when merging, changing lanes, and exiting the expressway area.
- Adjust the vehicle's position and speed to road and weather conditions to provide time for braking, accelerating, and steering.
 - Increase following distance:
 - at night, low visibility, and slick roads.
 - when following large trucks, busses.
- Reduce speed when roadway narrows at tunnels, construction zones, and for larger vehicles.

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Responsible**

MANAGING SPACE

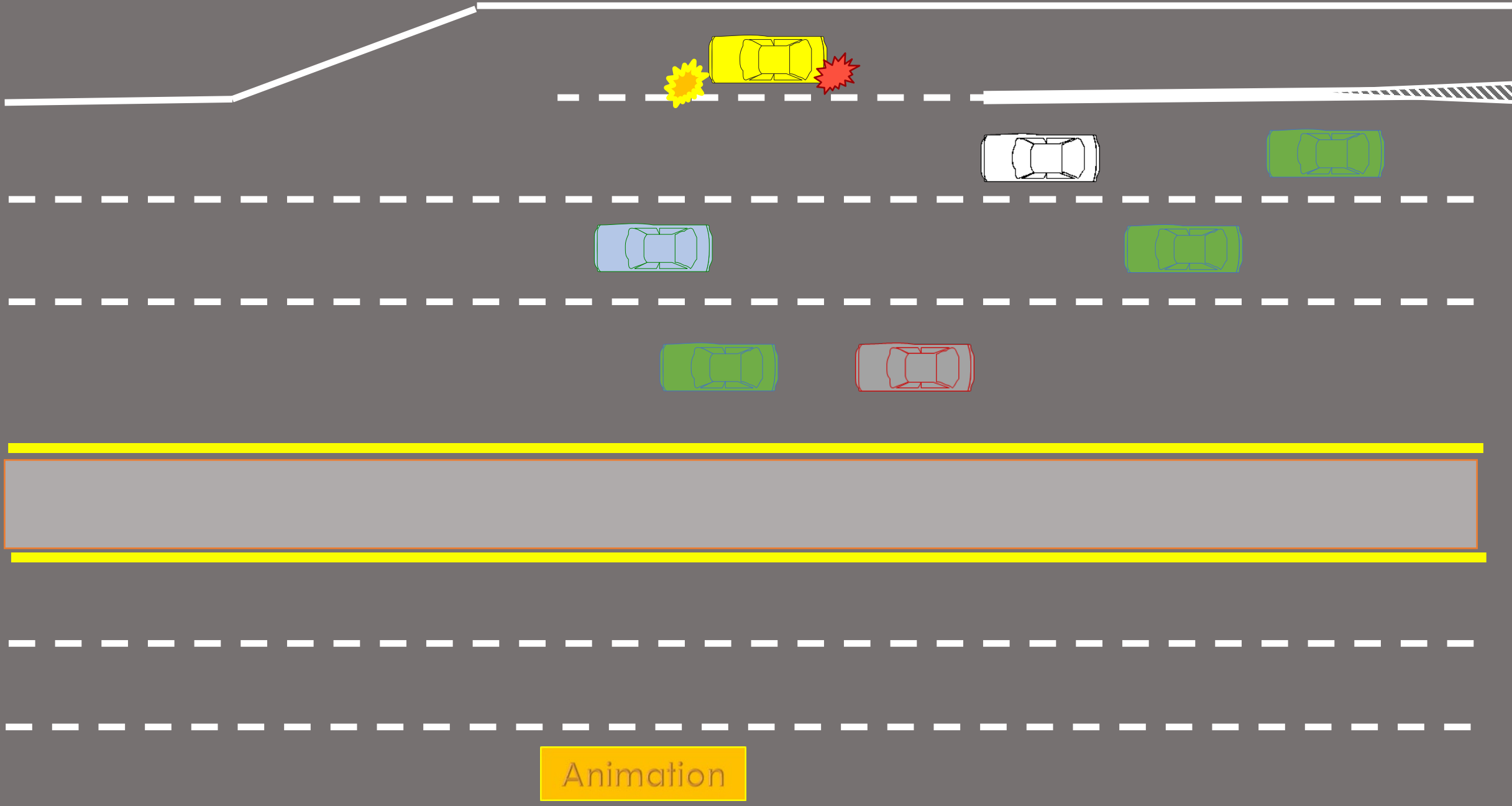
Use these guidelines to manage space more effectively on the multiple lane roadways:

- Make room for vehicles entering the roadway from an entrance ramp by changing lanes when clear.

These “courtesy” lane changes

- Allows for a safer merge and traffic flow from entrances.
- Do only when able and when needed. Be aware of passing vehicles.

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Animation

Choosing Lanes on Roadways

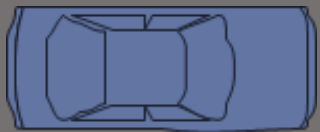
Far Left-Passing only or Left Exits

Travelling @Constant
Speed



Passing vehicles in right lane

Entering /Preparing to Exit/ Slower
vehicles, Large vehicles climbing lane



REDUCED RISK LANE CHANGES

Lane changes are the main maneuver used on multi-lane highways.

They are used for:

- **Entering or exiting**
- **Allowing another driver to enter**
- **Following large or slow-moving vehicles**
- **Blocked lane ahead**
- **To 'Steer Clear' & avoid shoulder hazards**
- **Passing**

REDUCED RISK LANE CHANGES

It may be necessary to make-

Multiple Lane Changes-moving across multiple lanes to set up for an exit or entry into special lanes

Each change must be a separate maneuver

- Check your rearview and side mirrors
- Blind- spot check
- Use your turn signals when making lane changes

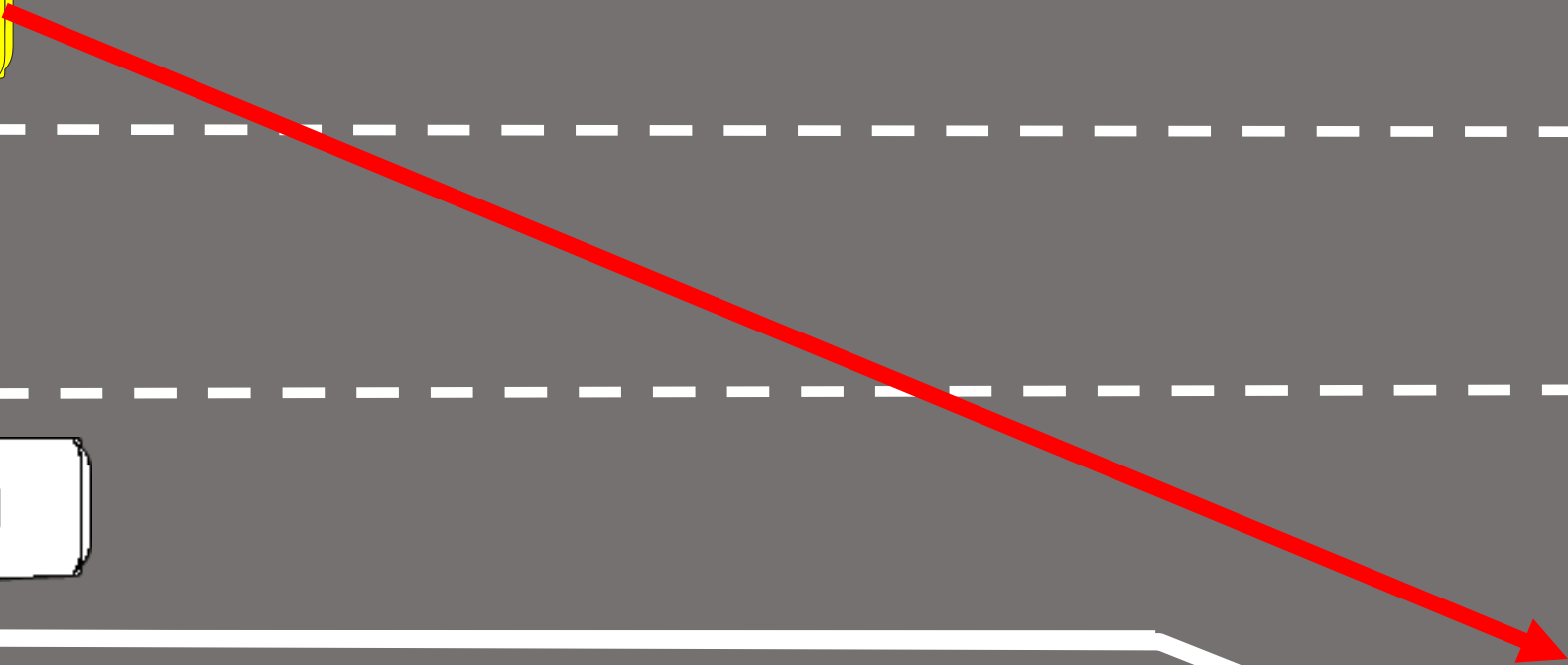
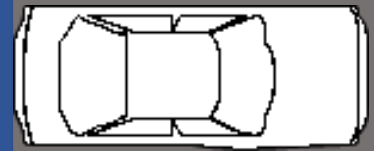
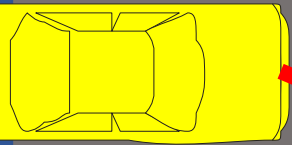
Extreme risk/ illegal to cross multiple lanes in one move

- Must establish placement in lane before movement to another

Animation

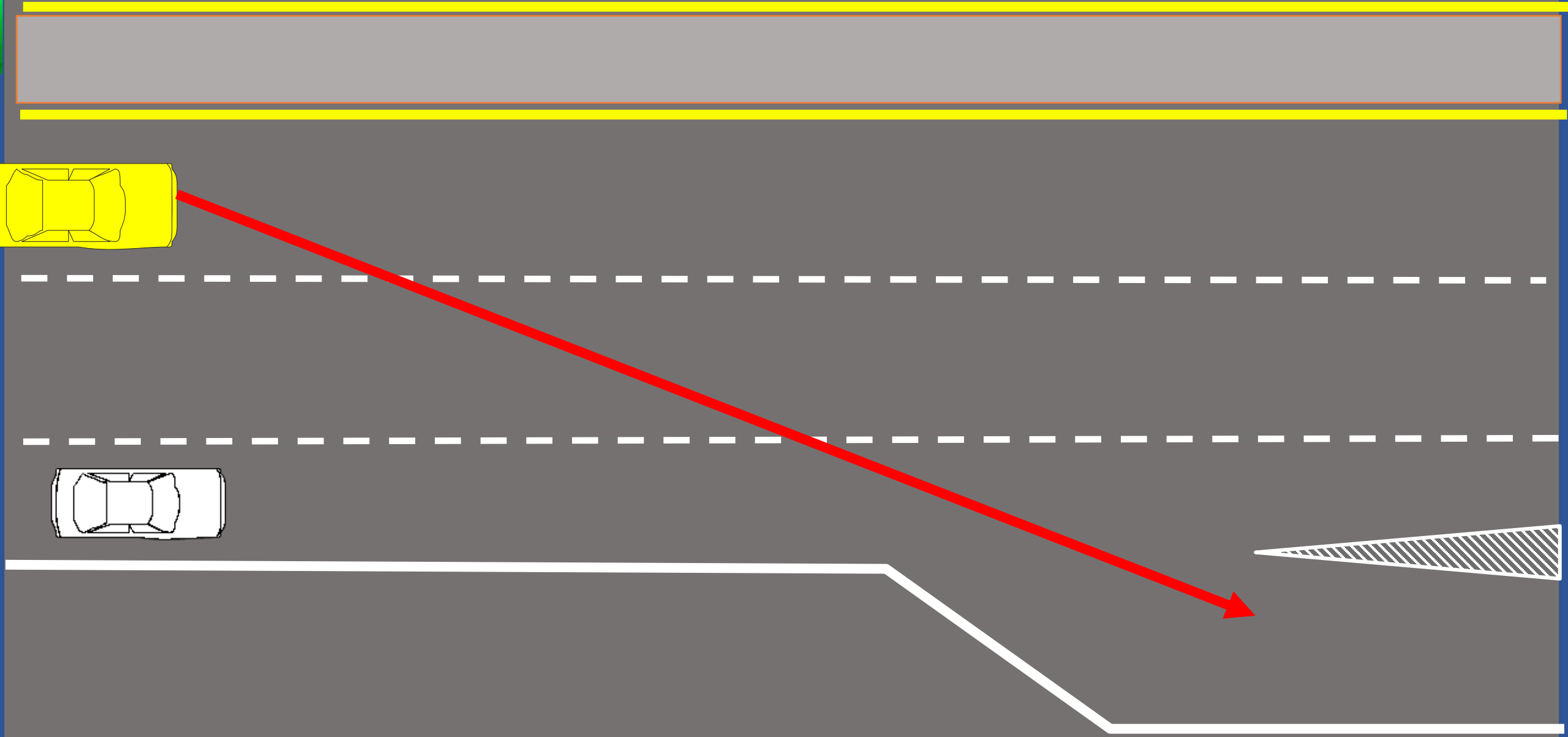
ILLEGAL/DANGEROUS MULTIPLE LANE CHANGES

Crossing Multiple Lanes



Animation

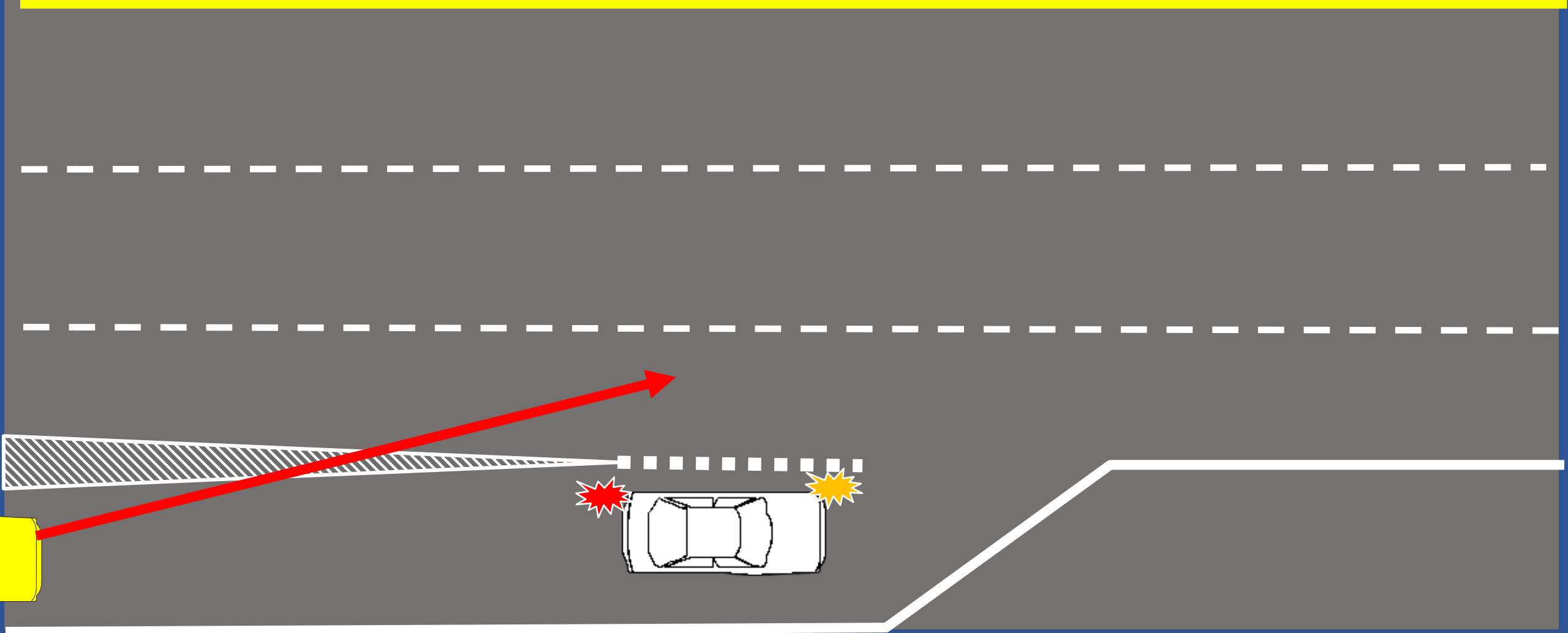
ILLEGAL/DANGEROUS MULTIPLE LANE CHANGES



Animation

ILLEGAL/DANGEROUS ENTRY

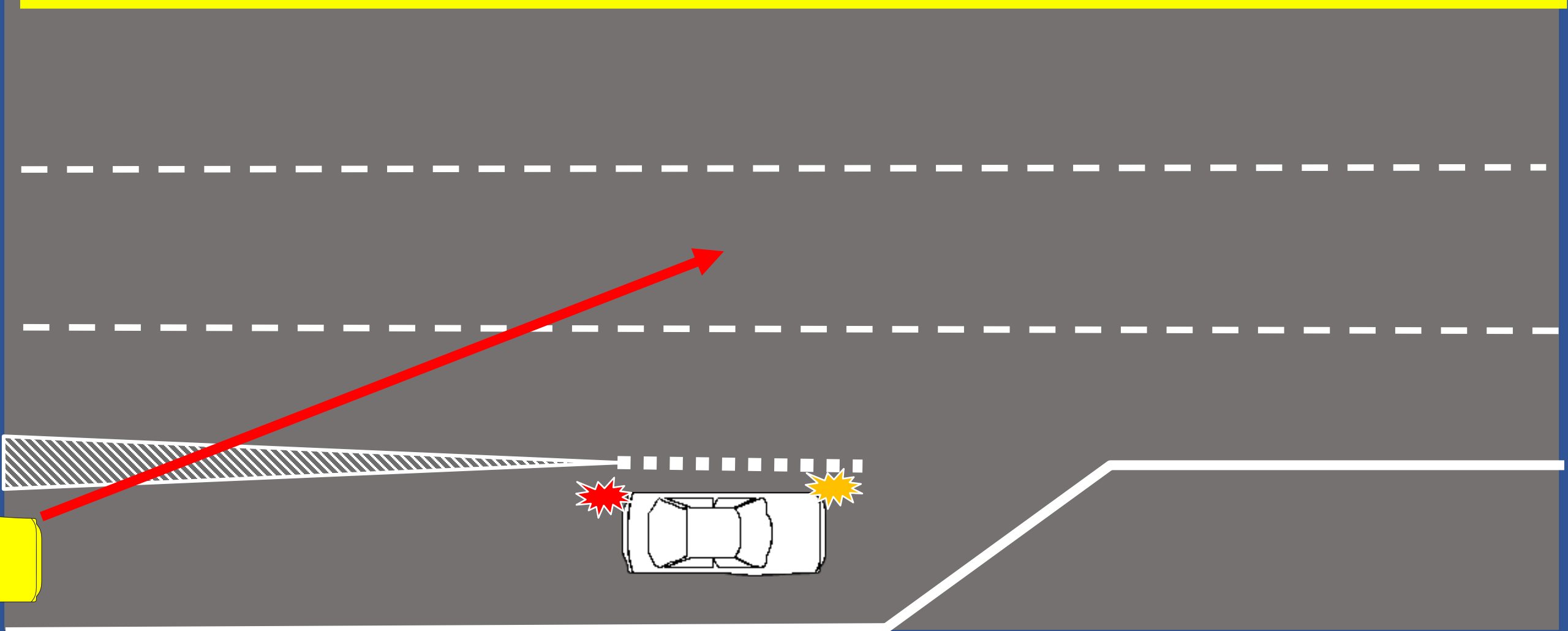
Early Merge



Animation

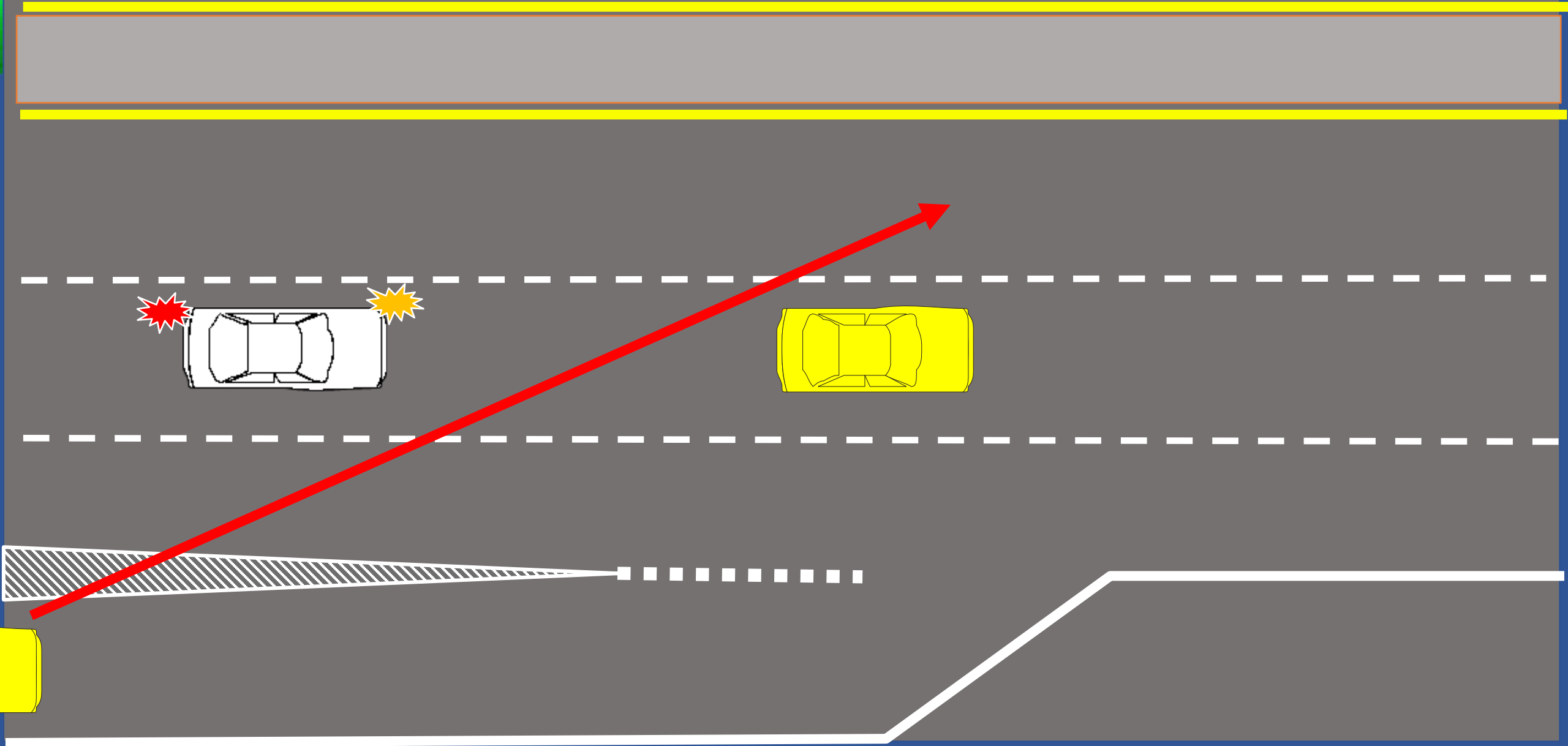
ILLEGAL/DANGEROUS ENTRY

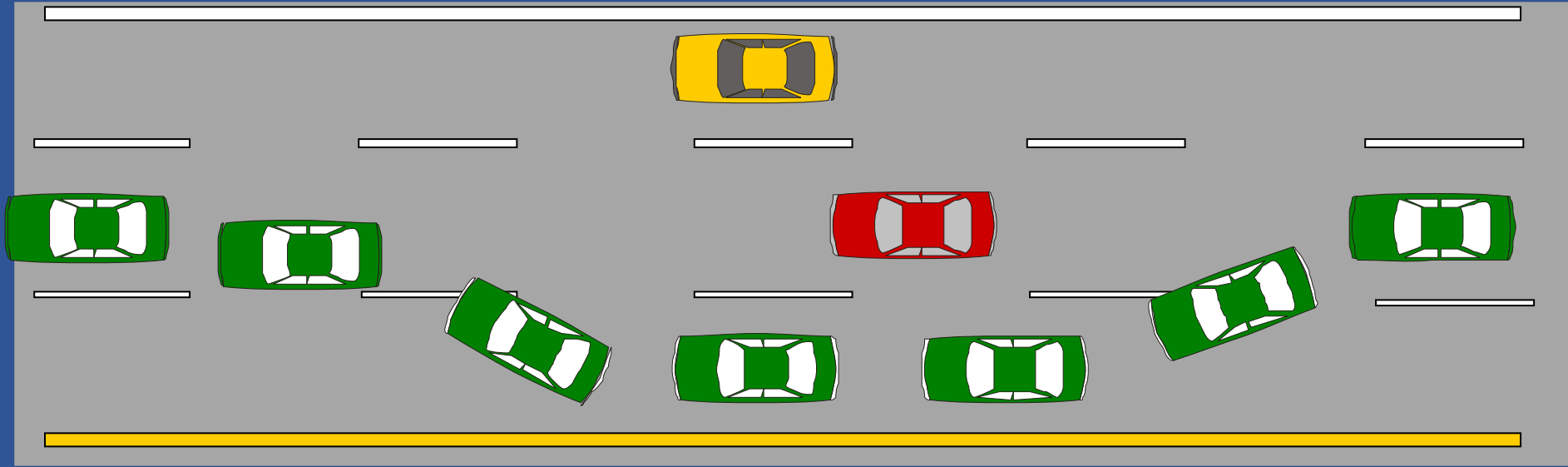
Early Merge and Crossing Multiple Lanes



Animation

ILLEGAL/DANGEROUS ENTRY





Passing on Multiple Lane Roads

Passing on Multiple Lane Roads

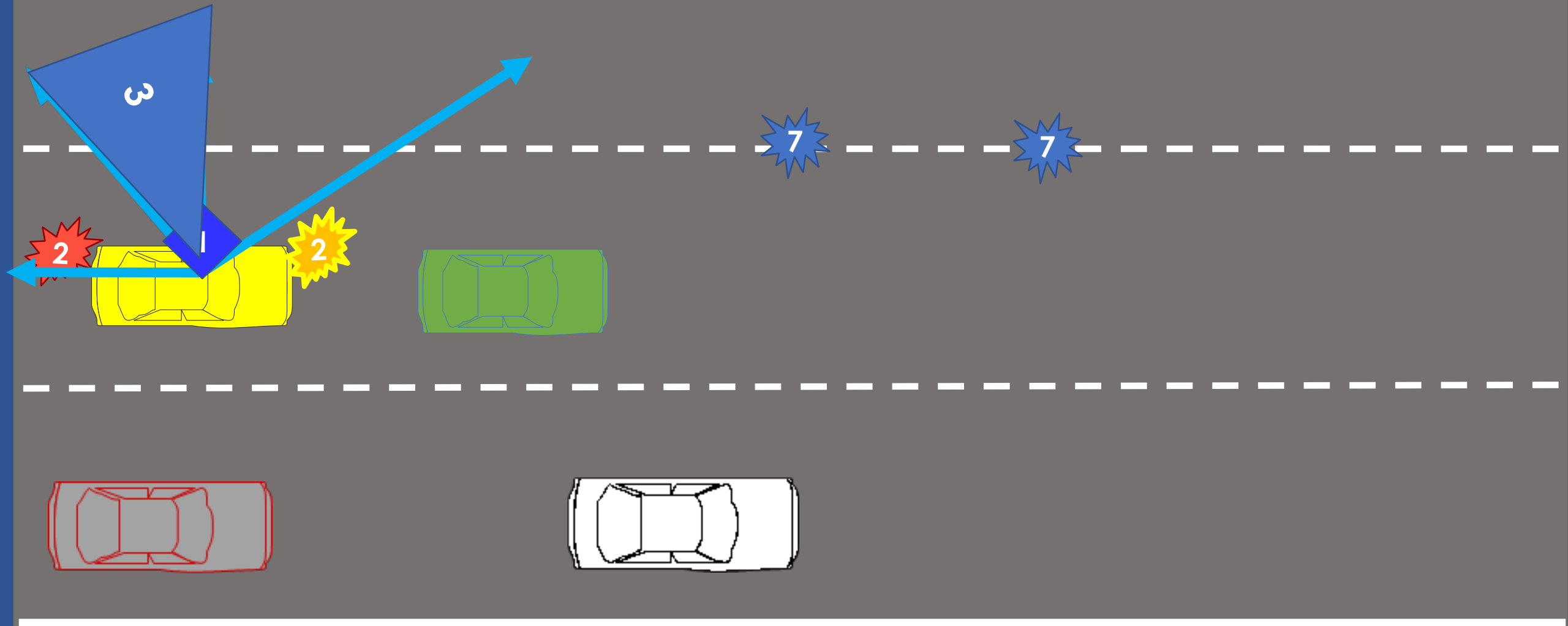


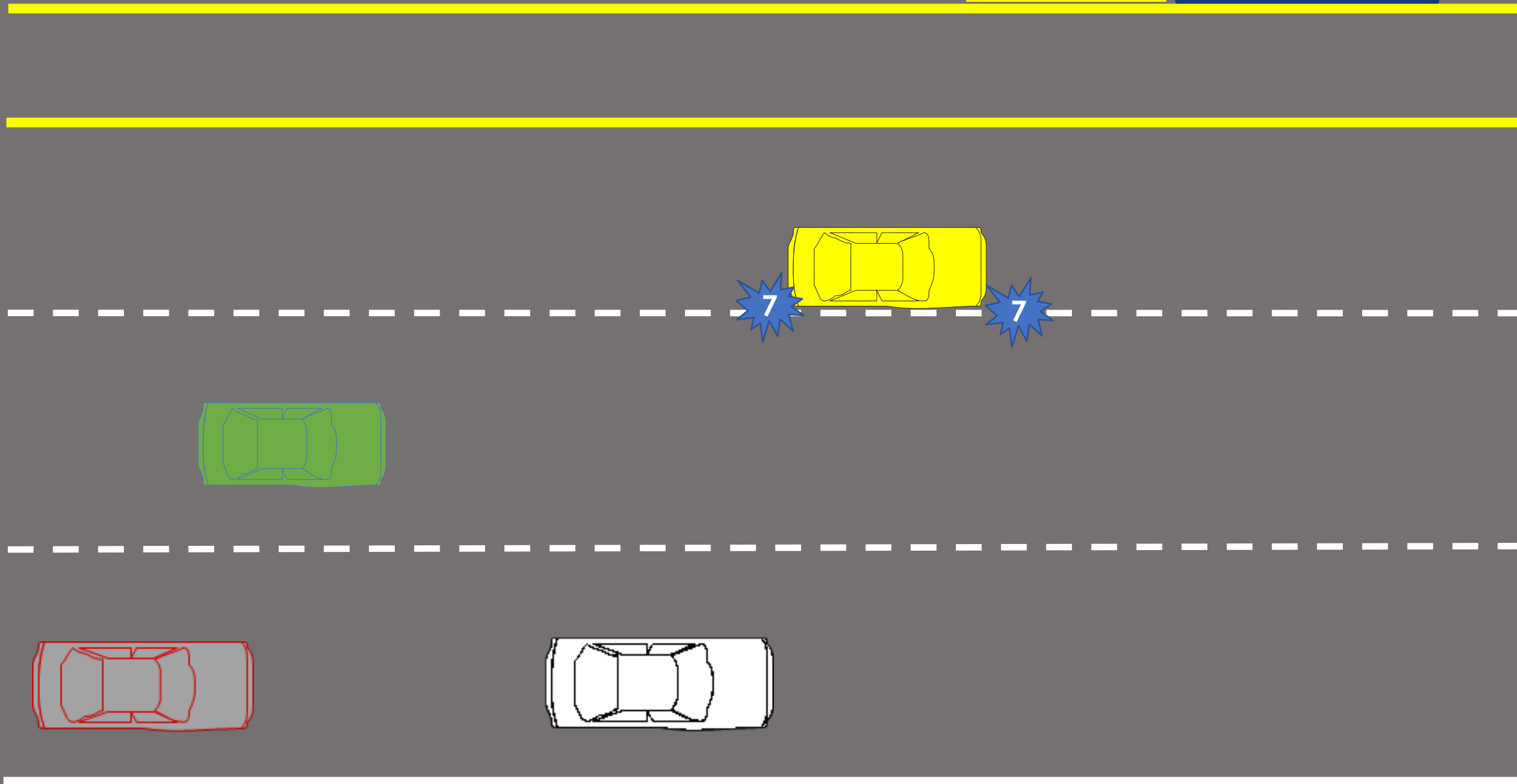
Passing on Multiple Lane Roads



video

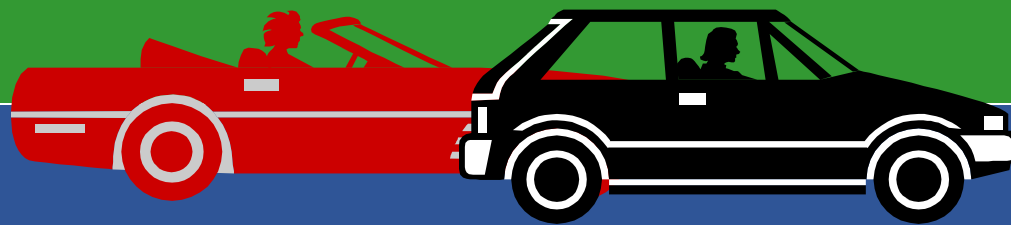
- 4. Accelerate smoothly
- 5. Move into the left lane
- 3. Change lanes smoothly
- 6. Cancel Signal
- 7. Pass and signal to return





When Being Passed

- Check passing vehicle's position
- Move away from it slightly if it is too close
- **Do not** increase speed
- Once passed, create space ahead and behind



EXITING

EXITING EXPRESSWAYS:

- **Exits may be on the right or left.**
- **Be sure to be in the correct exit and speed-change lanes.**
- **Signal your intent,**
- **mirror check**
- **blind-spot check**
- **Make your exit into the exit lane.**
- **Then slow down in the deceleration lane.**

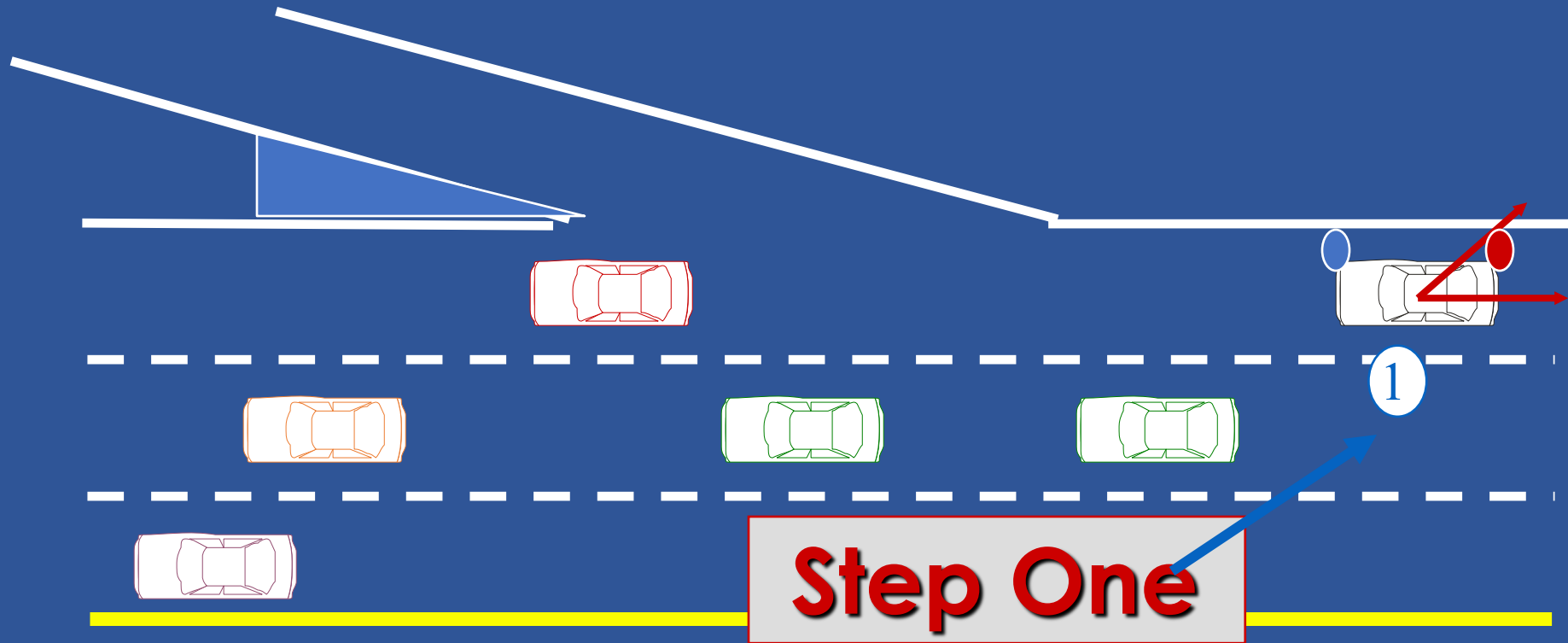
(this lane is for slowing down to ramp speeds)

Do not slow in traffic lane unless necessary due to:

- **slippery exit ramp**
- **traffic back up on ramp**
- **work-zone or emergency vehicles on ramp**

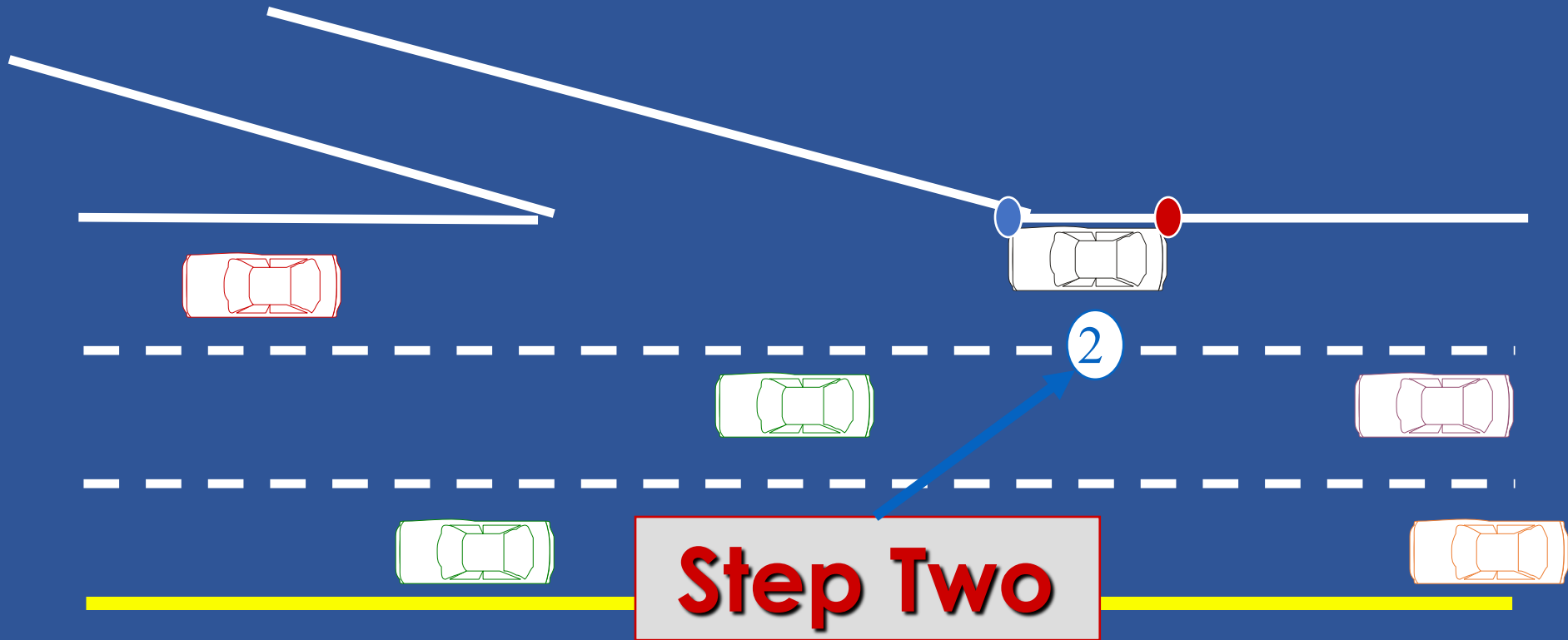
MULTIPLE LANE ROADWAY EXIT

Animation



- Check to Rear and Right Rear
- Use Mirrors and Check Blind Spot
- Use lane change indicator (right)

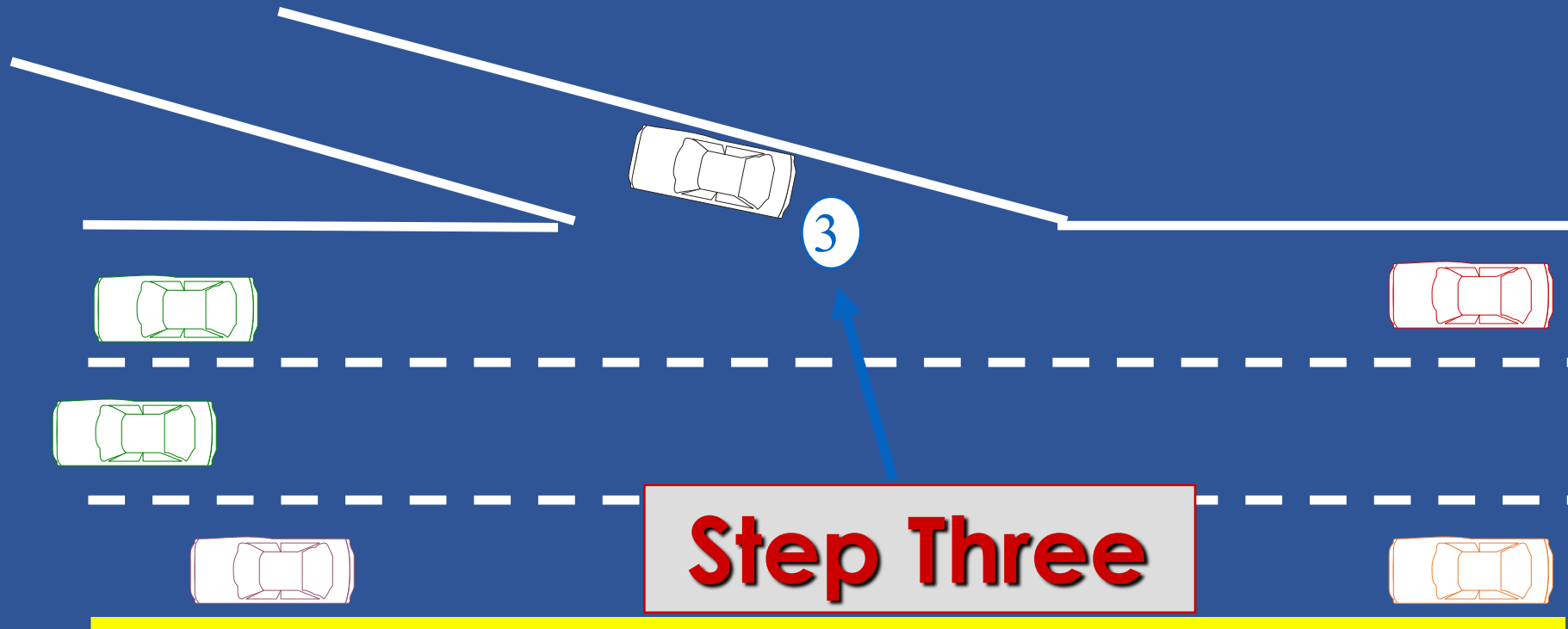
LANE POSITION AT EXIT



Step Two

- Adjust to Lane Position Three
- Maintain Speed
- Check Mirrors

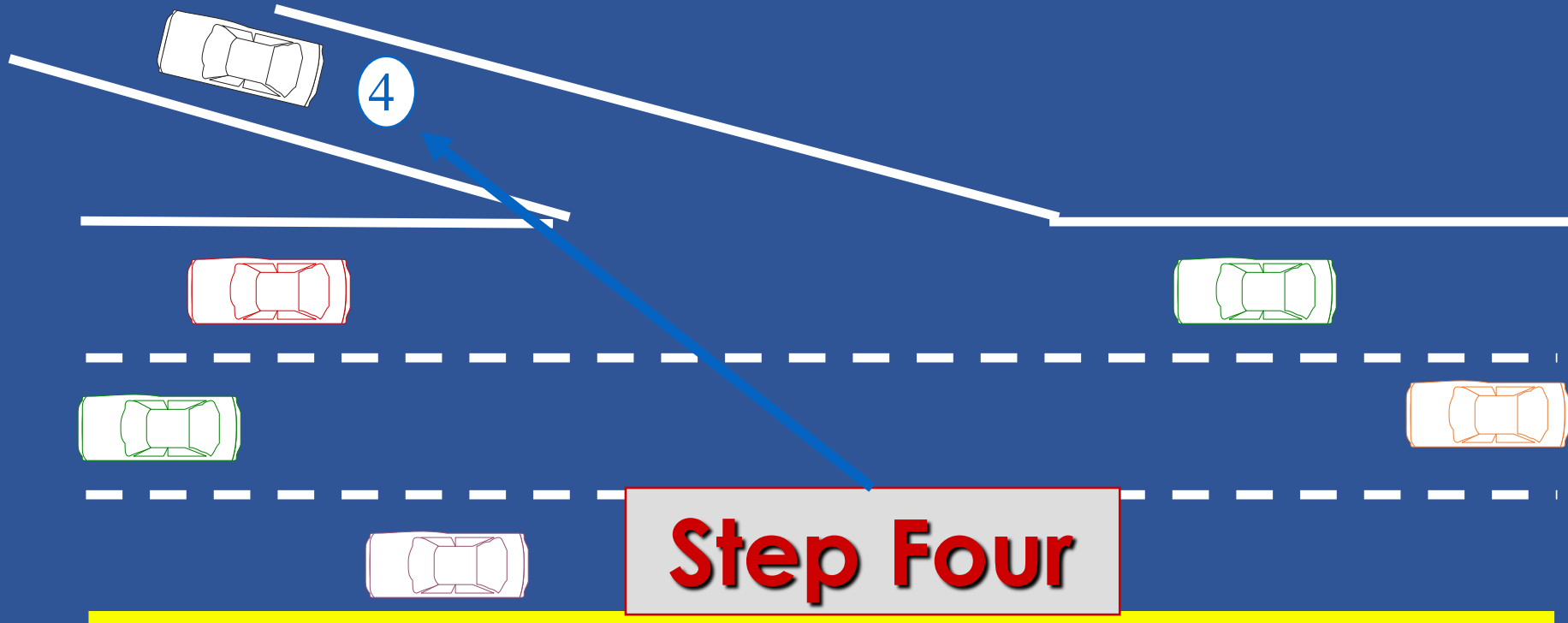
DECELERATION ON EXIT



- Enter Exit Area
- Release Lane Turn Signal
- Release Accelerator and Check Rear



ADJUSTING EXIT SPEED



Step Four

- Reduce Speed to Exit Speed
- Check New Path of Travel to Front

EXITING



video

Weave Lane

Shared Exit and Entrance

Traffic entering and exiting the expressway use the same lane

Right of Way-

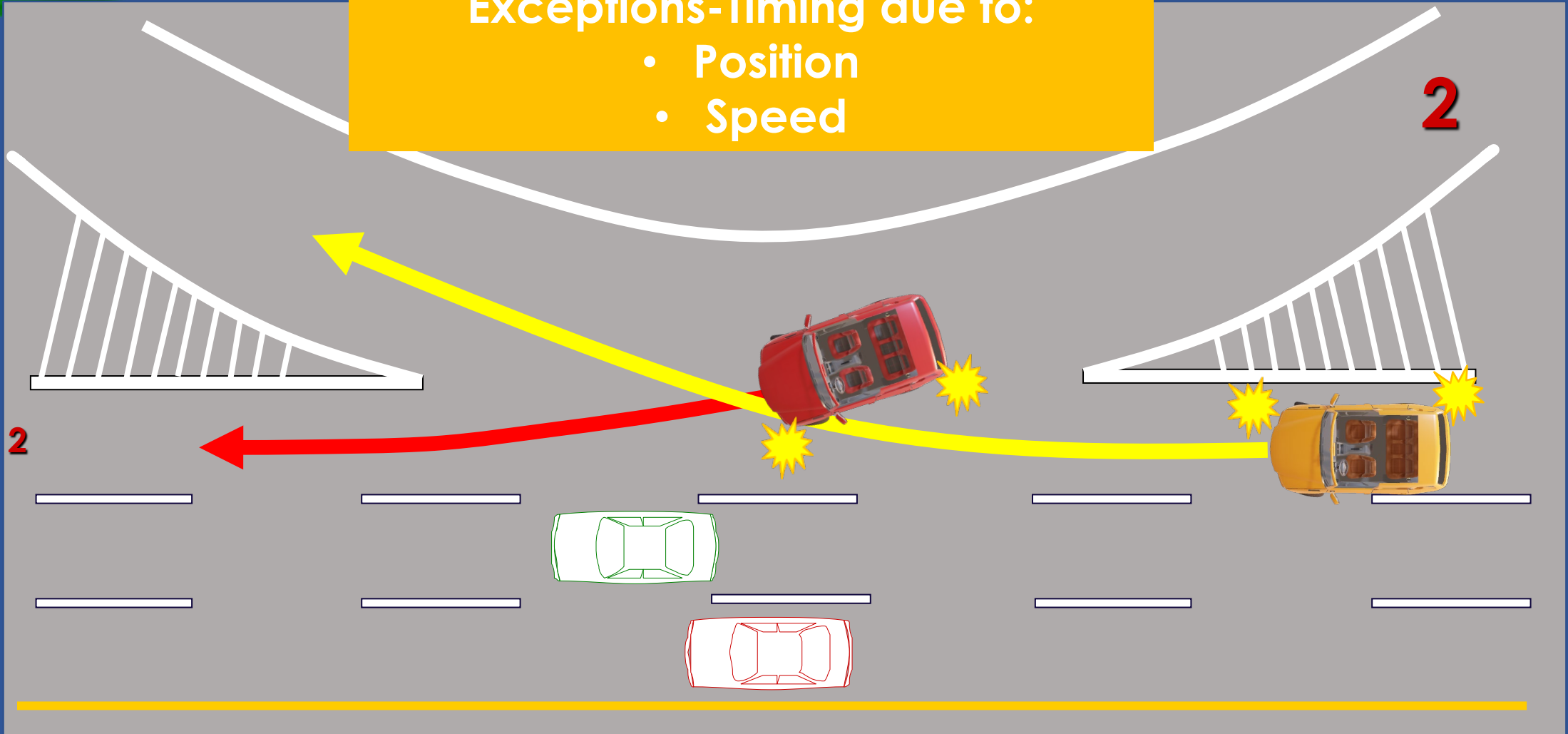
Vehicle entering the road yields to :

- Vehicles exiting
- Vehicles established in travel lane
- Vehicles ahead of you entering

Weave Lane

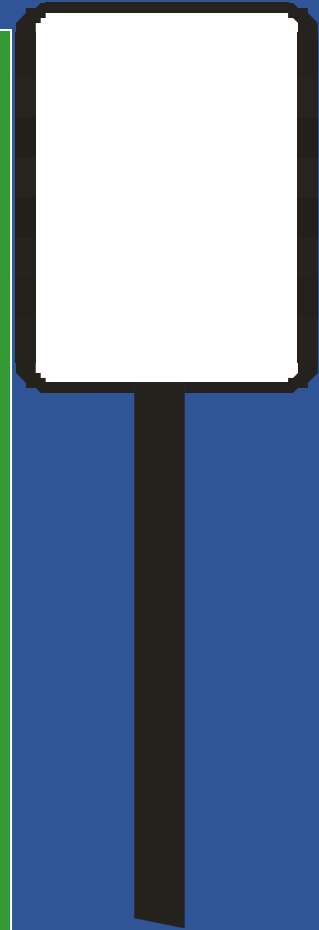
Exceptions-Timing due to:

- Position
- Speed



POTENTIAL EXITING PROBLEMS

- “Weave” lane conflicts
- Traffic stopped on the exit ramp
- Short deceleration lane
- Very slow ramp speed



EXPRESSWAY/INTERCHANGES

CHARACTERISTICS

- TRAFFIC-LIGHT TO HEAVY
- SPEEDS-POSTED 65-70 MPH
- LANES -MULTIPLE TRAVEL LANES
2 OR MORE, ONE DIRECTION

LIMITED ACCESS & EXIT – BY INTERCHANGES

SPECIFIC EXITS & ENTRANCES

- MERGES & EXITS – FROM RIGHT AND LEFT
- WEAVE LANE (SHARED EXIT / ENTRANCE)

NO INTERSECTIONS, PHYSICAL BARRIER SEPARATES LANE DIRECTION

- SIGNS / SIGNALS
GREEN GUIDE FOR EXITS / DISTANCES & LOCATION
YELLOW WARNING-MERGES, CURVES, RAMP SPEEDS
SPEED LIMITS
LANE USE SIGNALS
ENTRY METERING
ELECTRONIC MESSAGE SIGNS

OBJECTIVES /SKILLS PRACTICE

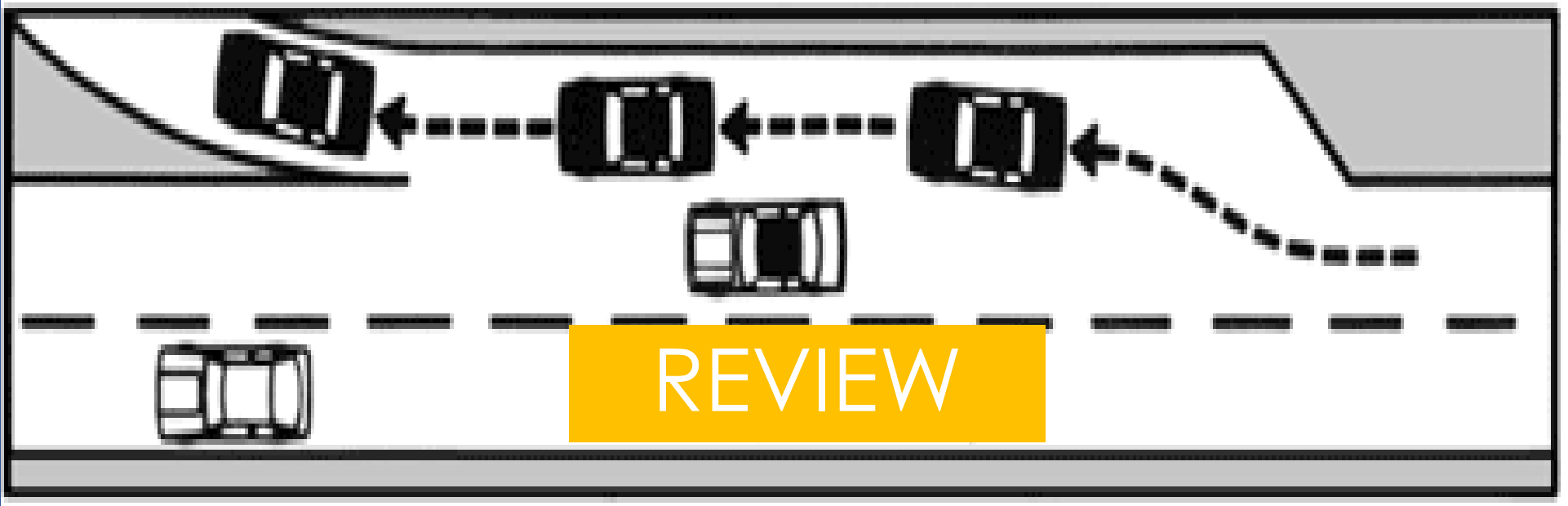
- MAINTAIN CONSTANT SPEED WITH CONDITIONS
@ POSTED SPEED OR 5 MPH BELOW
- EXIT & MERGING
PROCEDURE
SPEED
GAP SELECTION
BLIND SPOT CHECKS
YIELD
- IDENTIFY & AVOID CONFLICT -
COURTESY LANE CHANGES-
NECESSITY/ABILITY TO PERFORM
MERGE LANE AWARENESS –MIRRORS AS PASSING BY
- LANE CHANGES
- PASSING /BEING PASSED
- INCREASED AWARENESS AROUND CAR
- USE CRUISE CONTROL CORRECTLY * (WEATHER)
- MIRROR USE ROUTINE & REGULAR

EXPRESSWAY CHARACTERISTICS

• **Anticipated Problems**

- Speed control on ramps
- Not matching speed with selected gap on expressway
- Not making gap selection before the acceleration lane of the ramp
- Not using mirrors to check traffic behind and on expressway
- Not maintaining space cushion in front when entering
- Not using full acceleration and merge lane when entering
- Not taking the initiative when applicable at a weave lane
- Slowing on the expressway prior to exiting when not applicable
- Maintaining constant speed control on expressway
- Not scanning an intersection on the approach
- Projecting distance with time, i.e. identifying four seconds from a reference point, identifying number of seconds in relation to sight distance, identifying seconds in following
- Selectively using mirrors and blind spots
- Slowing after initiating a pass of a slower moving vehicle

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REVIEW

REVIEW

- Expressways, toll roads, turnpikes and freeways are fast, multiple-lane roads.
- The maximum speed limit is 55 -70 (or more) miles per hour.
- **Minimum safe speed**
- Motorized vehicles only
- Limited access and exit

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MULTIPLE LANE ROADWAY DANGERS

- Higher speeds - greater braking distances needed.
(Takes longer to stop!)
- Field of vision is narrowed
- Highway hypnosis
- Velocitation effect
- Entering and exiting sometimes on the left



MULTIPLE LANE ROADWAY DANGERS

- Vehicles on shoulder re-entering
- Windy sections of the roadway
- Two vehicles changing lanes into same lane
- Slow moving vehicles ahead
- “Pack Driving”
- Tire Hydroplaning during wet weather conditions



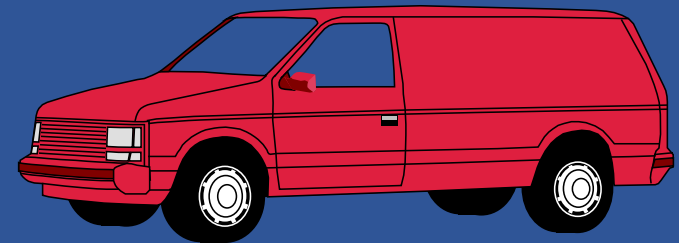
HIGHWAY HYPNOSIS

- This is a dull or drowsy condition that can occur because of the concentration needed while driving long distances
- Plan breaks and rest stops to combat highway hypnosis
- Pull to a safe area for rest and sleep when tired



REDUCING RISK ENTERING THE ROADWAY

- Search for proper entrance
- Search for potential conflicts
- Prepare to adjust speed
- Avoid stopping on the ramp
- Prepare to drive onto the shoulder
- Merge smoothly
- Create space around your vehicle



INCREASE FOLLOWING INTERVAL: WHEN? HOW? WHY?

Following large trucks or buses-

How? Slow down. Adjust lane position

Why? Blocked sightlines ahead and above.

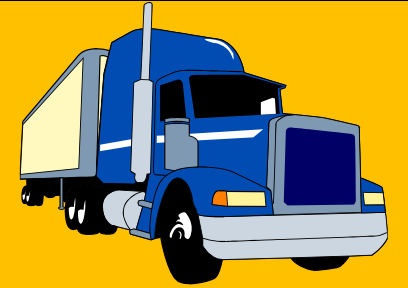
Driving in truck blind zone

Stopping distances increase at higher speeds

large vehicles take longer to stop

harder to control-fishtail, jack knife

When? Dark, weather, following distance 3 sec. or less



INCREASE FOLLOWING INTERVAL: WHEN? HOW? WHY?

Following motorcycles

How? Slow down. Adjust lane position

Why? Quick maneuvers by cyclist into path
Stopping distances increase at higher speeds, motorcycles take longer to stop
Harder to control, may 'lay it down'

When? Dark, fog, wet road, bad weather,
Following distance 3 seconds or less



INCREASE FOLLOWING INTERVAL: WHEN? HOW? WHY?

Being tailgated at high speeds

How? Maintain speed or adjust speed as needed
Maintain following distance ahead
Allow driver to pass
Move into slower lane

Why? Stopping distances increase
Risk being rear ended or rear end car ahead
Risk of road rage, other aggressive driving

When? Dark, fog, wet road, bad weather,
Type of vehicle

INCREASE FOLLOWING INTERVAL: WHEN? HOW? WHY?

When driving a heavy load or pulling a trailer

How? Maintain speed or adjust speed as needed
Maintain following distance ahead
Allow driver to pass
Move into slower lane

Why? Stopping distances increase
Risk being rear ended or rear end car ahead
Control problems and braking problems

When? Dark, fog, wet road, bad weather,
Type of vehicle

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This series was produced by the Novice Driver Statewide Program and the IUP Institute for Rural Health and Safety through a grant from the PA Highway Safety Office

Videos and Photos: IRHS/NDSP

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