



MANUAL

VIII. DRIVING ENVIRONMENTS & THEIR CHARACTERISTICS

Lessons and Hints to Work With Your New Teen Driver

Expressway/Limited Access Highways

Part 8



Be Ready, Be Safe, Be Responsible

Be Ready, Be Safe, Be Responsible

VIII. DRIVING ENVIRONMENTS & THEIR CHARACTERISTICS

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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.

Be Ready, Be Safe, Be Responsible

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.

Be Ready, Be Safe, Be Responsible

EXPRESSWAYS & LIMITED ACCESS HIGHWAYS

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EXPRESSWAYS & LIMITED ACCESS HIGHWAYS

Be Ready, Be Safe, Be Responsible

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.

Be Ready, Be Safe, Be Responsible

Other Users

Trucks, trailers, buses, and other large vehicles add 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.

ENTERING



Be Ready, Be Safe, Be Responsible

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

ENTERING

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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

Be Ready, Be Safe, Be Responsible

Begin searching highway for:

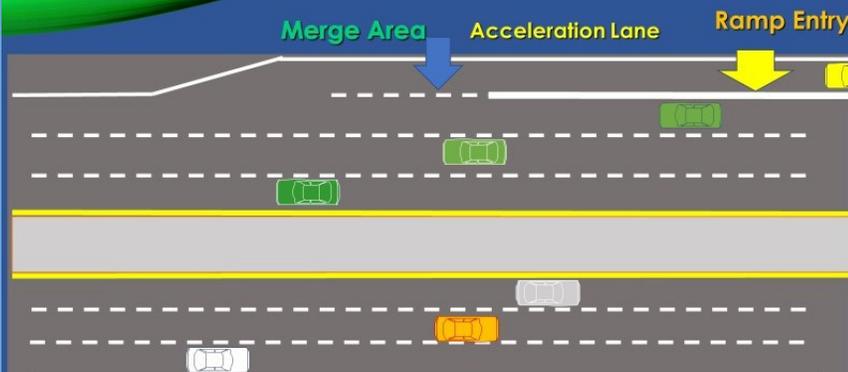
- amount of traffic
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Acceleration lane

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Animation

ENTRANCE RAMPS

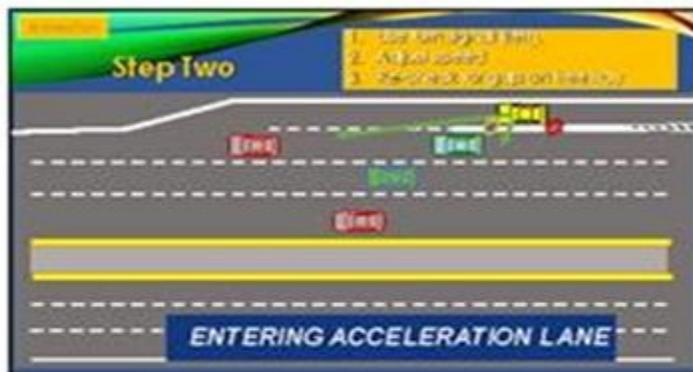




Entering the On-Ramp

Step One

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



Entering Acceleration Lane

Step Two

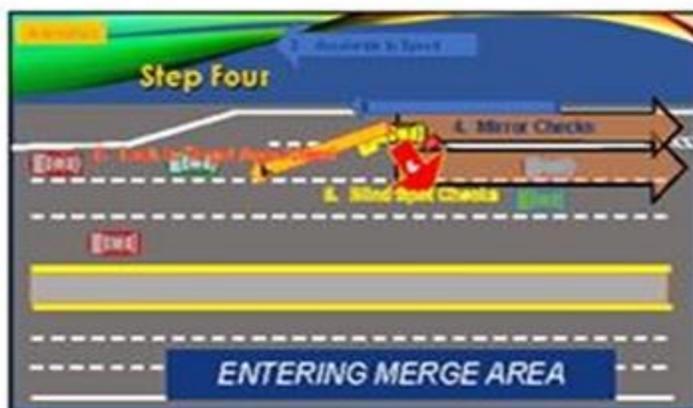
1. Use turn signal (left).
2. Adjust speed
3. Re-check for gap on freeway



Entering Merge Area

Step Three

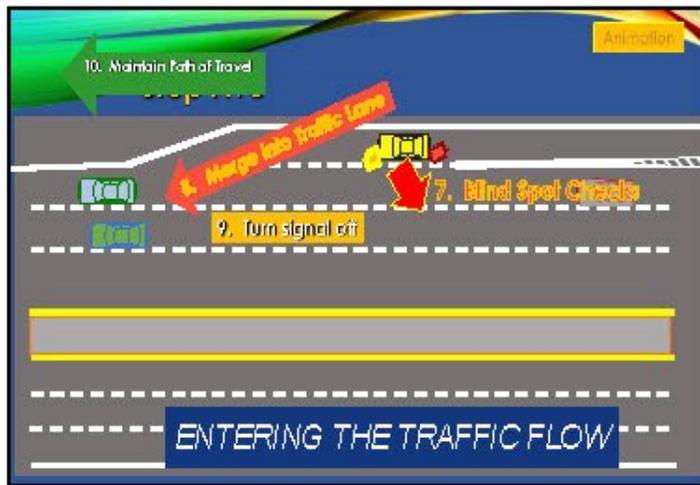
1. Begin Acceleration
2. Check Rear Zone and Left Rear Zone



Entering Merge Area

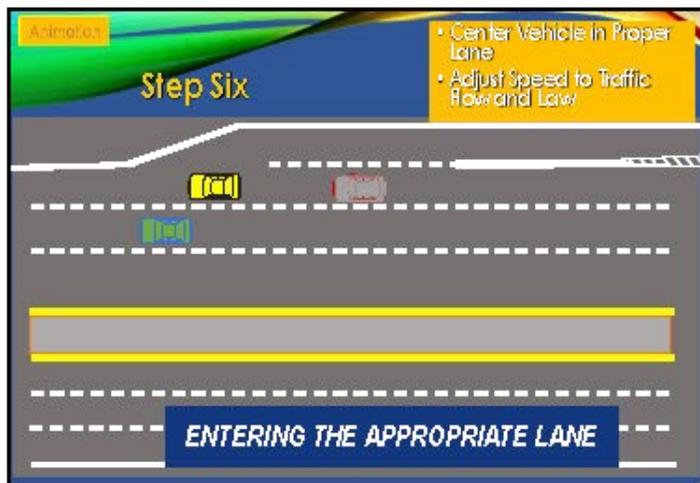
Step Four

1. Accelerate to Speed
2. Mirror Checks
3. Blind Spot Checks
4. Look to Target Area Ahead



Entering the Traffic Flow Step Five

1. Blind Spot Check
2. Merge into Traffic Lane
3. Release turn signal
4. Maintain Path of Travel



Entering the Appropriate Lane Step Five

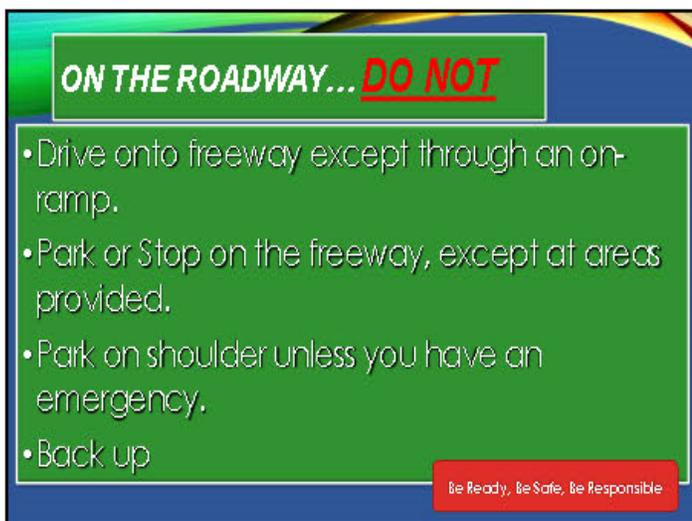
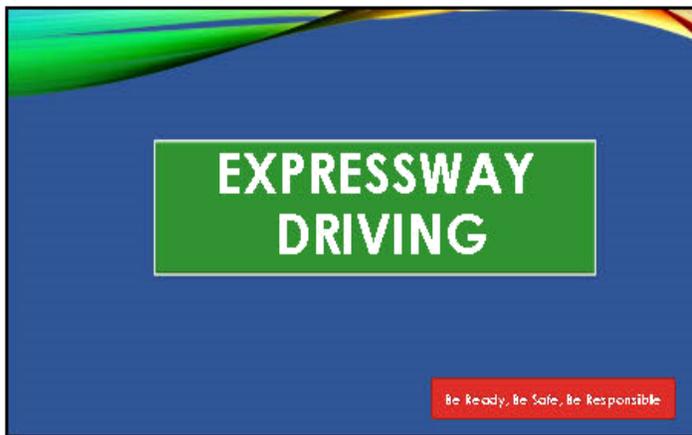
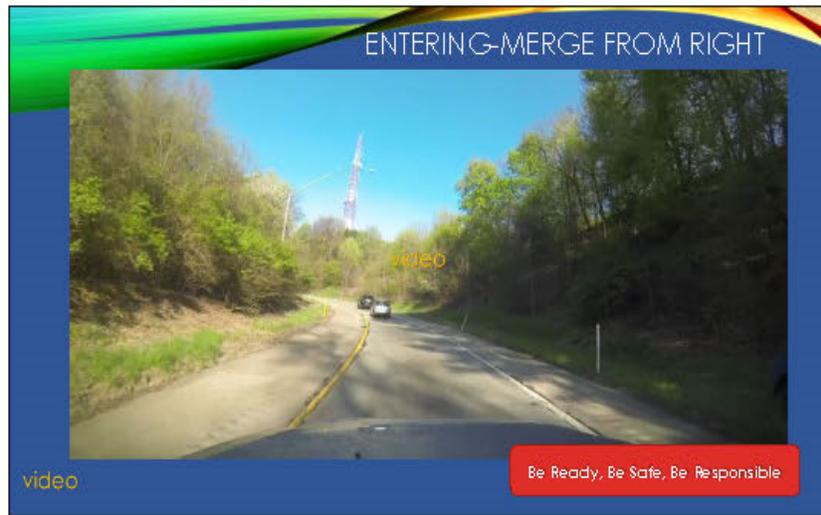
1. Center Vehicle in Proper Lane
2. Adjust Speed to Traffic Flow and Law

video



video

Be Ready, Be Safe, Be Responsible



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

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

Be Ready, Be Safe, Be Responsible

On the Roadway... Do Not

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 - passing,
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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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Managing Space

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

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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.

Be Ready, Be Safe, Be Responsible

Managing Space

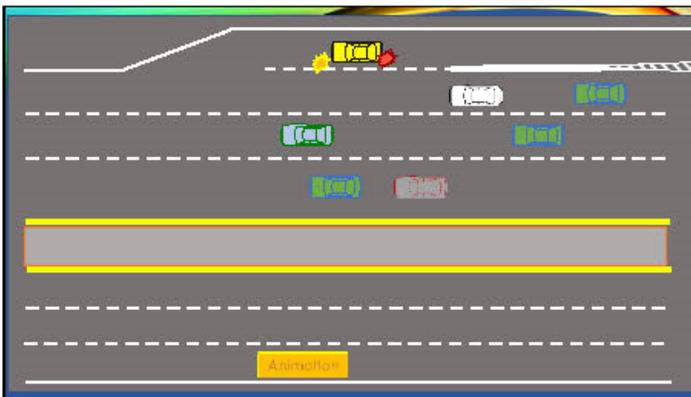
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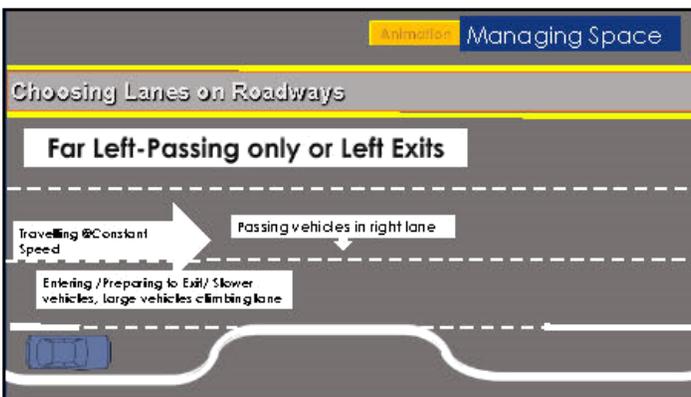
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Animation



Animation

Managing Space

Choosing Lanes on Roadways

Far Left Lanes-Passing or set up for exit on left

Middle Lanes-Travelling at constant speeds or passing slower vehicles in right lane

Right Lanes- Entering or 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

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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

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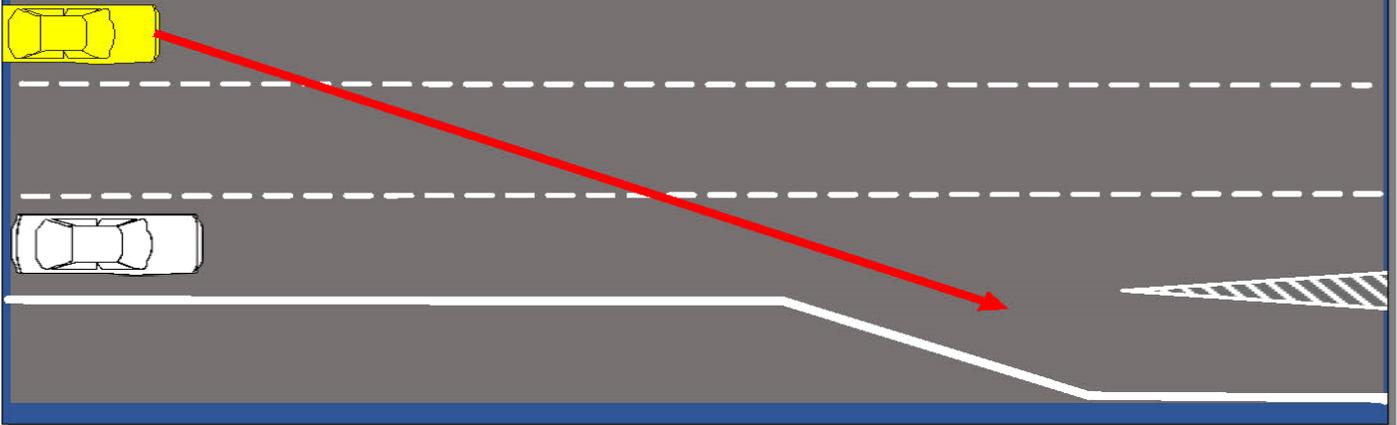
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Animation

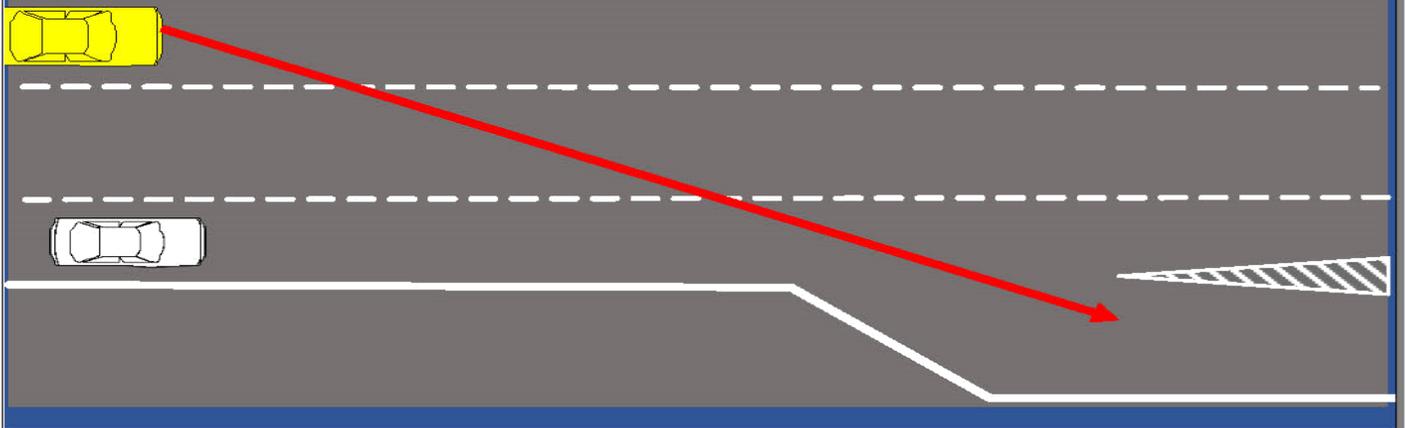
ILLEGAL/DANGEROUS MULTIPLE LANE CHANGES

Crossing Multiple Lanes



Animation

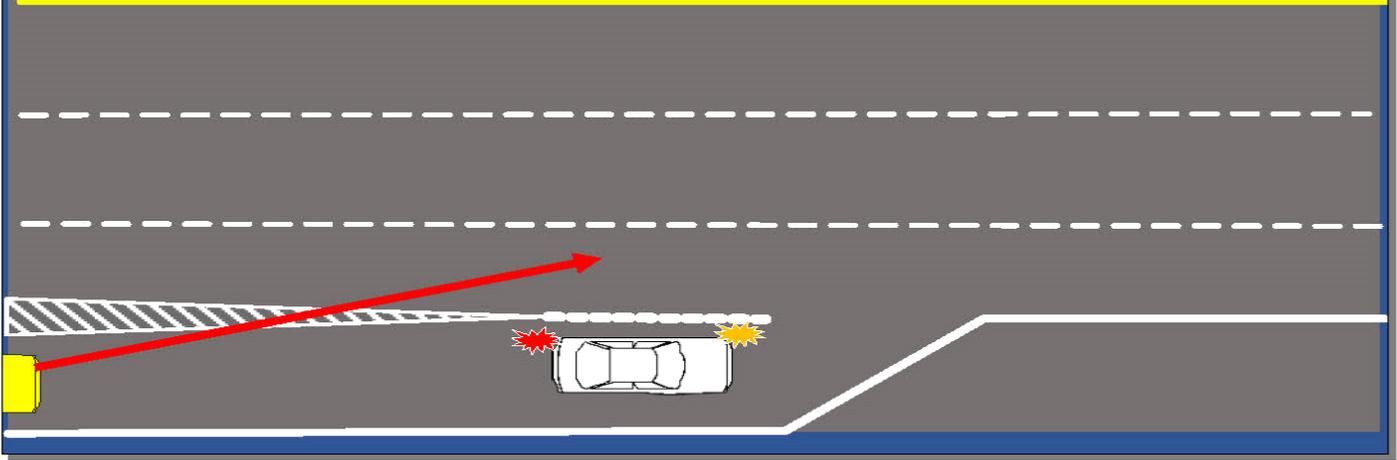
ILLEGAL/DANGEROUS MULTIPLE LANE CHANGES



Animation

ILLEGAL/DANGEROUS ENTRY

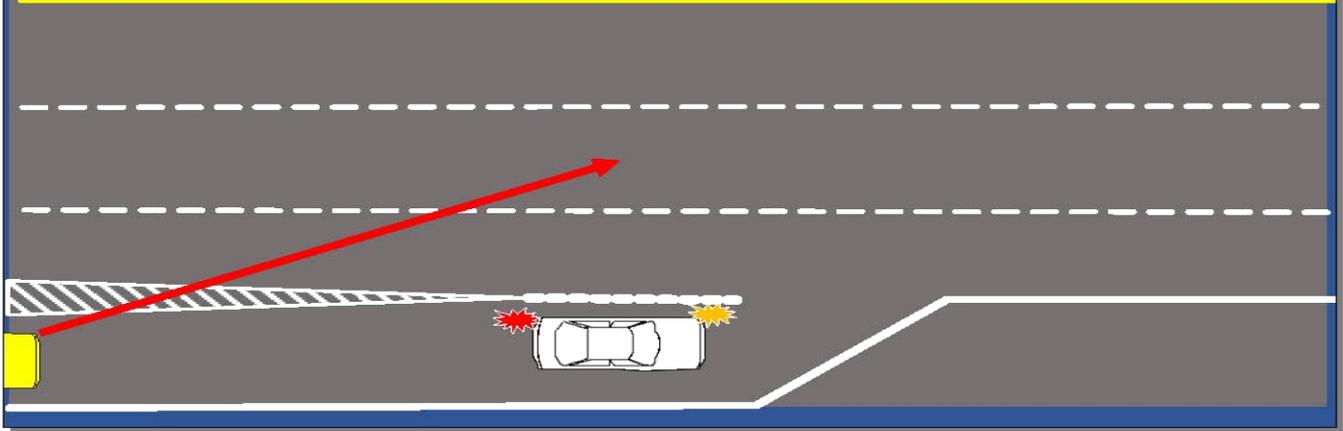
Early Merge



Animation

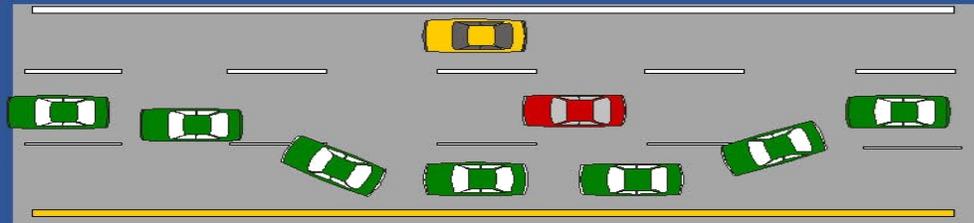
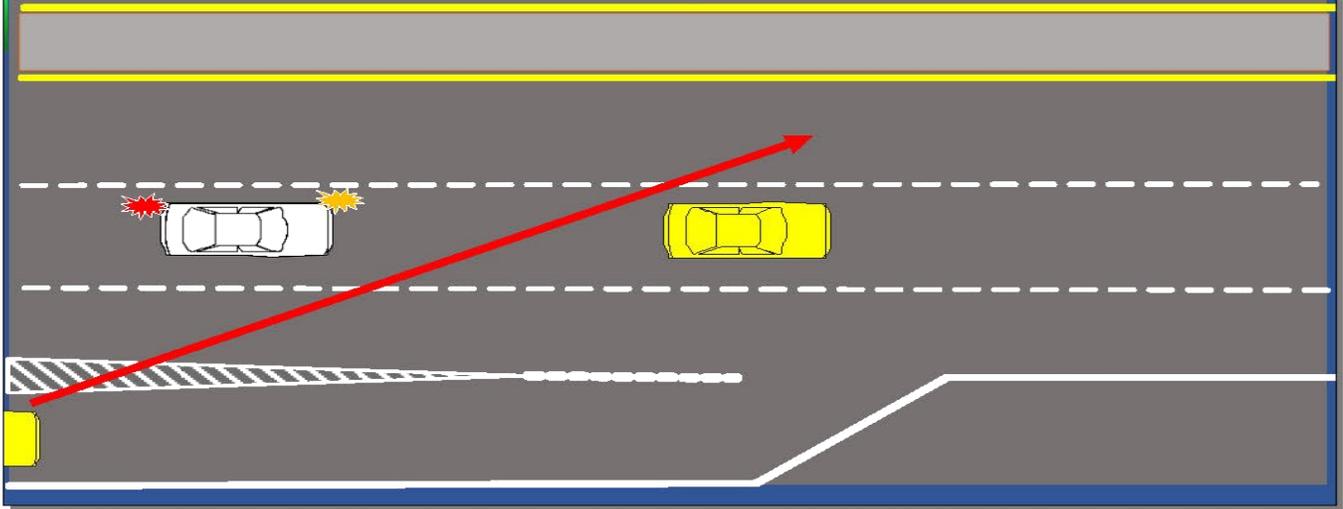
ILLEGAL/DANGEROUS ENTRY

Early Merge and Crossing Multiple Lanes



Animation

ILLEGAL/DANGEROUS ENTRY



Passing on Multiple Lane Roads



PASSING ON EXPRESSWAYS

- Check traffic ahead, to the sides, and behind
- BSE mirror settings.
- Signal
- Make a blind spot check
- Accelerate smoothly
- Change lanes smoothly
- Cancel signal
- Pass and signal to return
- Check mirrors
- When both sets of headlights of the vehicle being passed are visible, return to the lane
- Cancel signal
- Adjust speed and/or vehicle position to create space all around your vehicle

The **RED** line shows path of the red car.

The **BLUE** arrows show where the driver's eyes are searching.

A diagram showing a car (red) passing another car (blue) on a multi-lane road. The red car is in the left lane, and the blue car is in the right lane. Blue arrows point from the driver's perspective to the front and rear of the blue car, indicating the driver's search area. A red line shows the path of the red car as it moves from the right lane to the left lane to pass the blue car.

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- **BGE** mirror settings.
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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



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

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MULTIPLE LANE ROADWAY EXIT

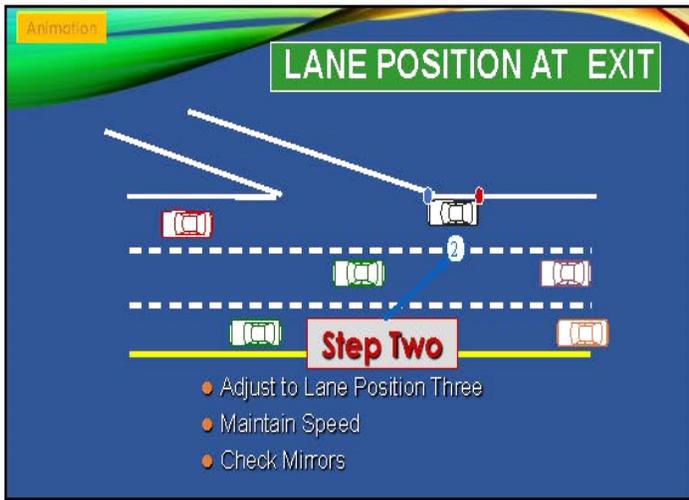


- Check to Rear and Right Rear
- Use Mirrors and Check Blind Spot
- Use lane change indicator (right)

Multiple Lane Roadway Exit

Step One

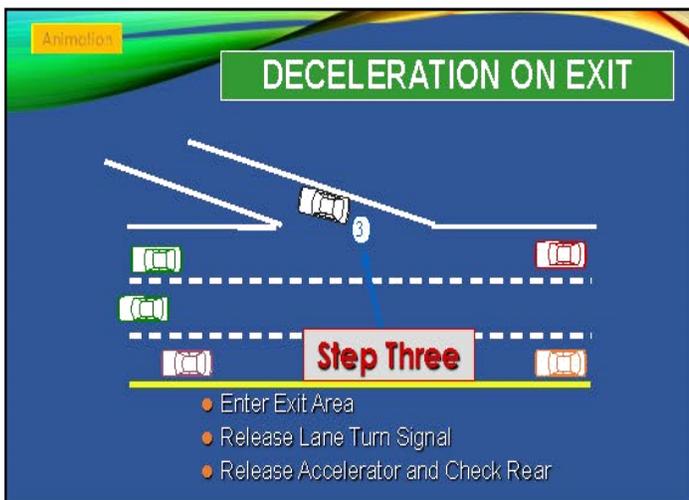
- Check to Rear and Right Rear
- Use Mirrors and check blinds spot
- Use lane change indicator (right)



Lane Position at Exit

Step Two

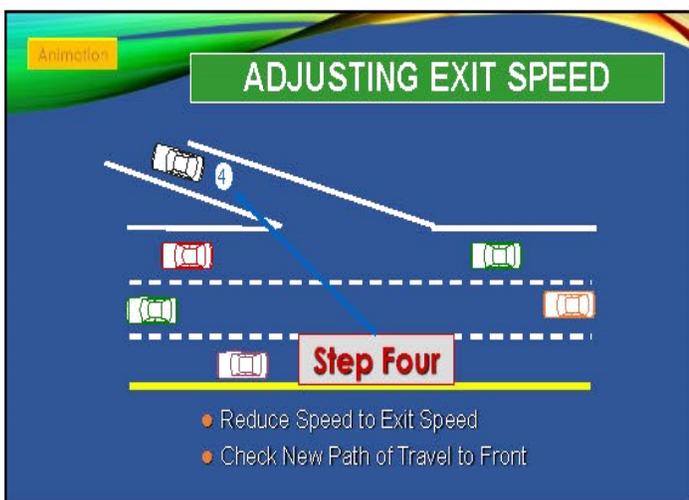
- Adjust to Lane Position Three
- Maintain Speed
- Check Mirrors



Deceleration on Exit

Step Three

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



Adjusting Exit Speed

Step Four

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



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

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Weave Lane
 Goal-Avoid Conflict
 Red Car (2) Must yield to Yellow (1)

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

Be Ready, Be Safe, Be Responsible

REVIEW

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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

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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



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



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



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: Why? How?

When?

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

When? Dark, weather, following distance 3 seconds 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: Why? How? When?

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, driver may "lay it down"

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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

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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/INTERCHANGES

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- YELLOW WARNING-MERGES, CURVES, RAMP SPEEDS
- SPEED LIMITS
- LANE USE SIGNALS
- ENTRY METERING
- ELECTRONIC MESSAGE SIGN

OBJECTIVES /SKILLS PRACTICE

- MAINTAIN CONSTANT SPEED WITH CONDI-

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

Be Ready, Be Safe, Be Responsible

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

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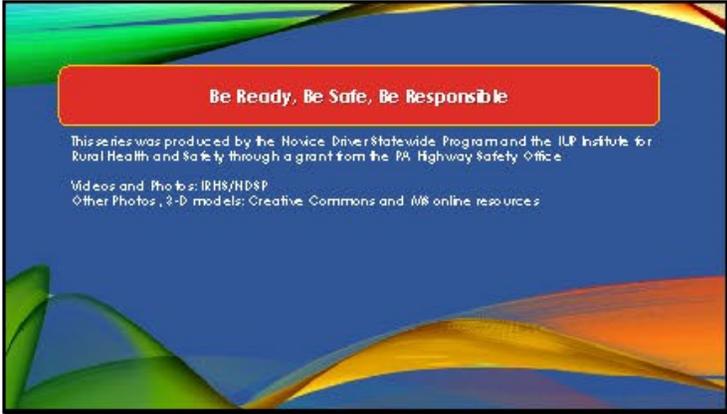
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Selectively using mirrors and blind spots

Slowing after initiating a pass of a slower moving vehicle



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

Videos and Photos: IRHS/NDSP
Other Photos, 3-D models: Creative Commons and Web online resources