Idaho Driver Education and Training

Strategies for Controlled Access Highways

Part I

Introduction to Controlled Access Highways

- Plans for the “Interstate System," began in the late 1930s
- The system was created in 1956 and named for President Dwight Eisenhower
- Without a system of interstate highways, life in America would be far different
  - It would be more risky, less prosperous, and lacking in the efficiency and comfort that Americans now enjoy and take for granted

Source: The US Interstate Highway System: 40 Year Report
American Highway Users Alliance., June 1996

Characteristics

- The words “limited” and “controlled” access highways are interchangeable with “freeways” and “expressways”
  - Travel on these highways is limited to motor vehicles
  - Drivers are limited as to where they can enter and exit
- Drivers have minimum and maximum speed limits
- Opposing traffic has some type of barrier (median grass strip, guardrail, concrete wall, etc.)
- There are multiple lanes in both directions
- They are designed to carry lots of traffic quickly and efficiently
- Distance between entrance and exit locations may only be a mile apart or many miles apart

Characteristics

- **The U.S. Interstate Highway System has enriched the quality of life for every American**
  - **It provides virtually all Americans with the ability to move quickly to any destination within their communities and to travel throughout the nation, inexpensively, and at whatever time or date they desire**

Photo courtesy of http://americanhistory.si.edu/onthemove/exhibition/exhibition_16_7.html

Characteristics

- There is a high injury severity rate when a collision occurs because of the higher speeds
- On Idaho's interstates, 2,460 collisions occurred during 2004 causing 38 fatalities

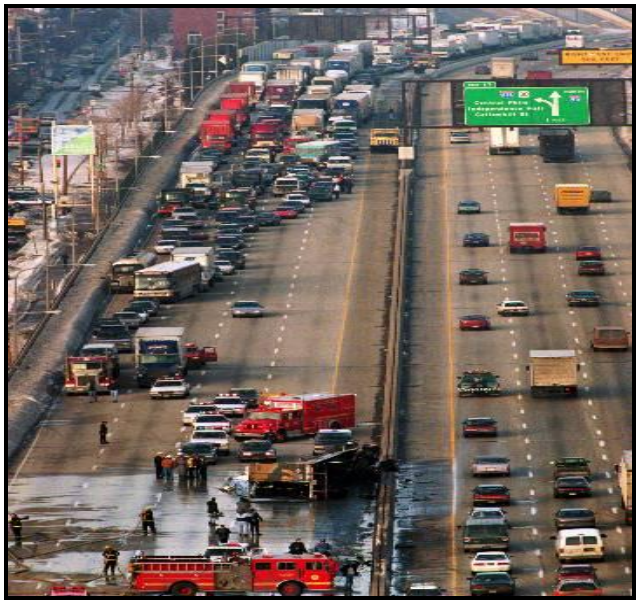


Photo courtesy of AAA Foundation

Emergency Crossovers

- **Emergency crossovers on limited access roadways are restricted to emergency or law enforcement vehicles only**
- **Driving in these restricted areas can result in a large fine**

Photo courtesy of http://www.photodiary.org/kw_freeway.shtml

Toll Roads and Bridges

- Roads and bridges are generally paid for with fuel taxes
- From 1864 to 1872 Idaho was completely dependent on toll roads and bridges
- Idaho chartered toll companies to build and maintain roads and bridges
- There were so many toll roads and bridges, The Legislature received complaints that tolls were seriously eating into their profits
- The system was abolished in 1872
- Yankee Jim's National Park Toll Road in Park County was the last toll road in Idaho

Photo courtesy of the American Bridge Company

The Snowden Bridge over the Missouri River charged tolls until 1956

High Occupancy Vehicle (HOV) Lanes

- **High-Occupancy Vehicle (HOV) lanes allow vehicles with two or more people to use diamond and express lanes**
- **The goal of HOV lanes is to use the current freeway system more efficiently and to provide a quicker, more reliable trip to those who car pool**

ADVANTAGES OF LIMITED ACCESS ROADS

- Collision and fatality rates are lower
- Cross traffic is not present
- Opposing traffic is separated by a barrier
- There are no stops
- Signs are large and placed well in advance
- Higher speed limits allow for fast, efficient travel

DISADVANTAGES OF CONTROLLED ACCESS HIGHWAYS

- Lane selection is critical
- Increased stopping distance
- Small driving errors can be disastrous
- Different size and weight of vehicles adds additional challenges
- Rush hour congestion

Highway Hypnosis

- **A dull or drowsy condition that can occur because of the concentration needed while driving long distances**
- **It becomes worse when the driver's eyes focus on the yellow line**

- **Plan breaks and rest stops to combat highway hypnosis**
- **Pull to a safe area for rest and sleep when tired**

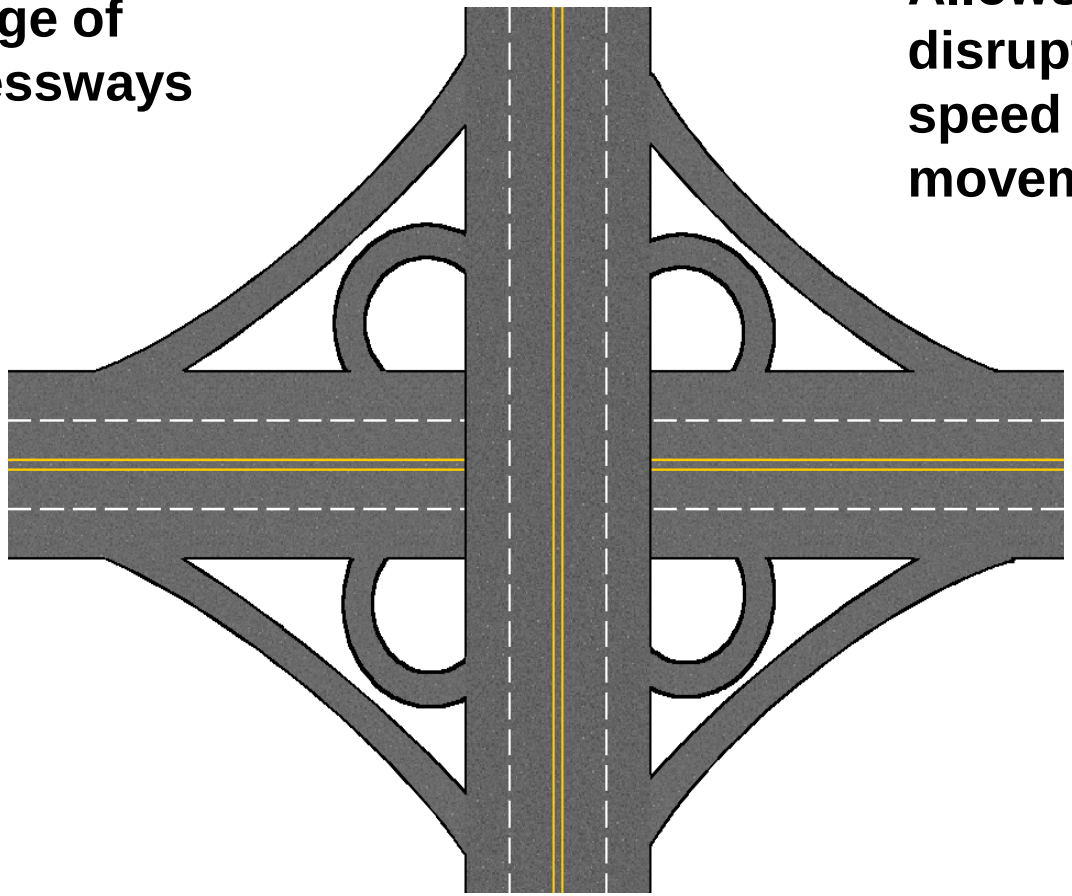
Velocitation

- **Unknowingly accelerating to a higher speed while driving is known as velocitation**
- **When driving at faster speeds for a period of time the body adjusts and causes the driver to think the vehicle is going slower than it actually is**

Photo courtesy of AAA Foundation

CLOVERLEAF INTERCHANGE

Allows for interchange of two expressways or major roadways



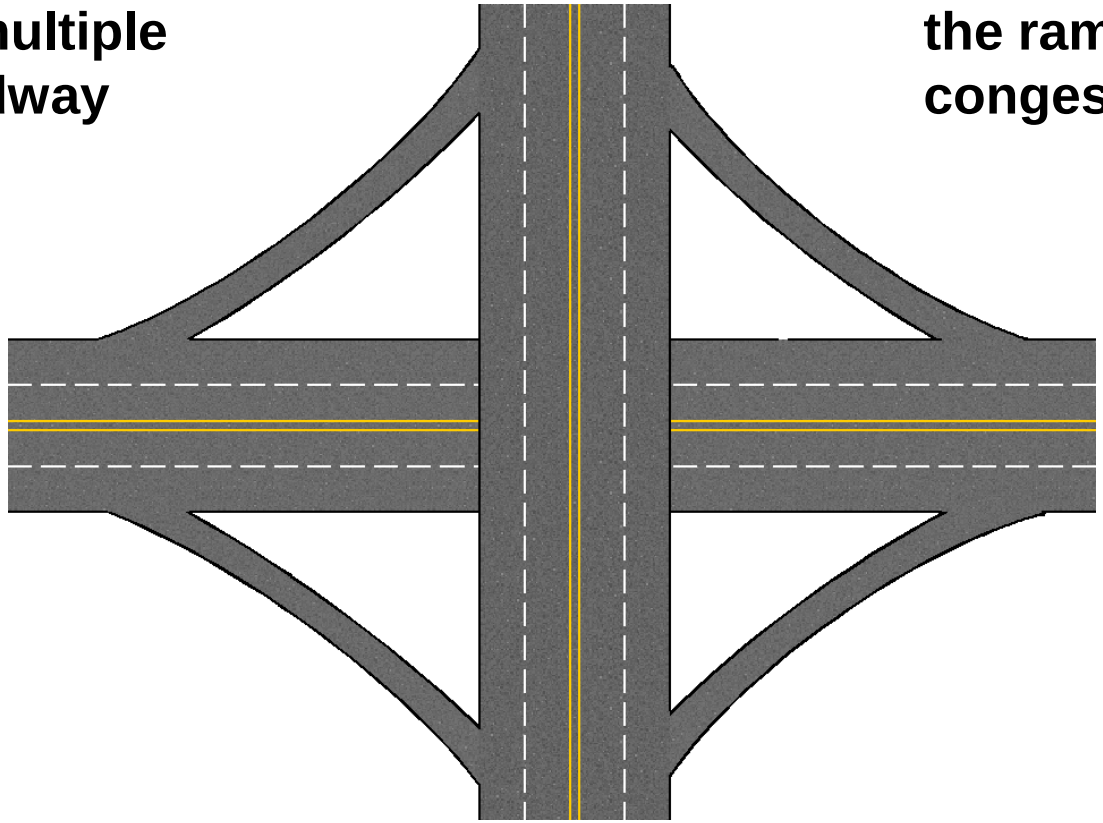
Allows minimal disruption of speed or movement

DIAMOND INTERCHANGE

Allows for interchange of a major roadway with a secondary dual or multiple lane roadway

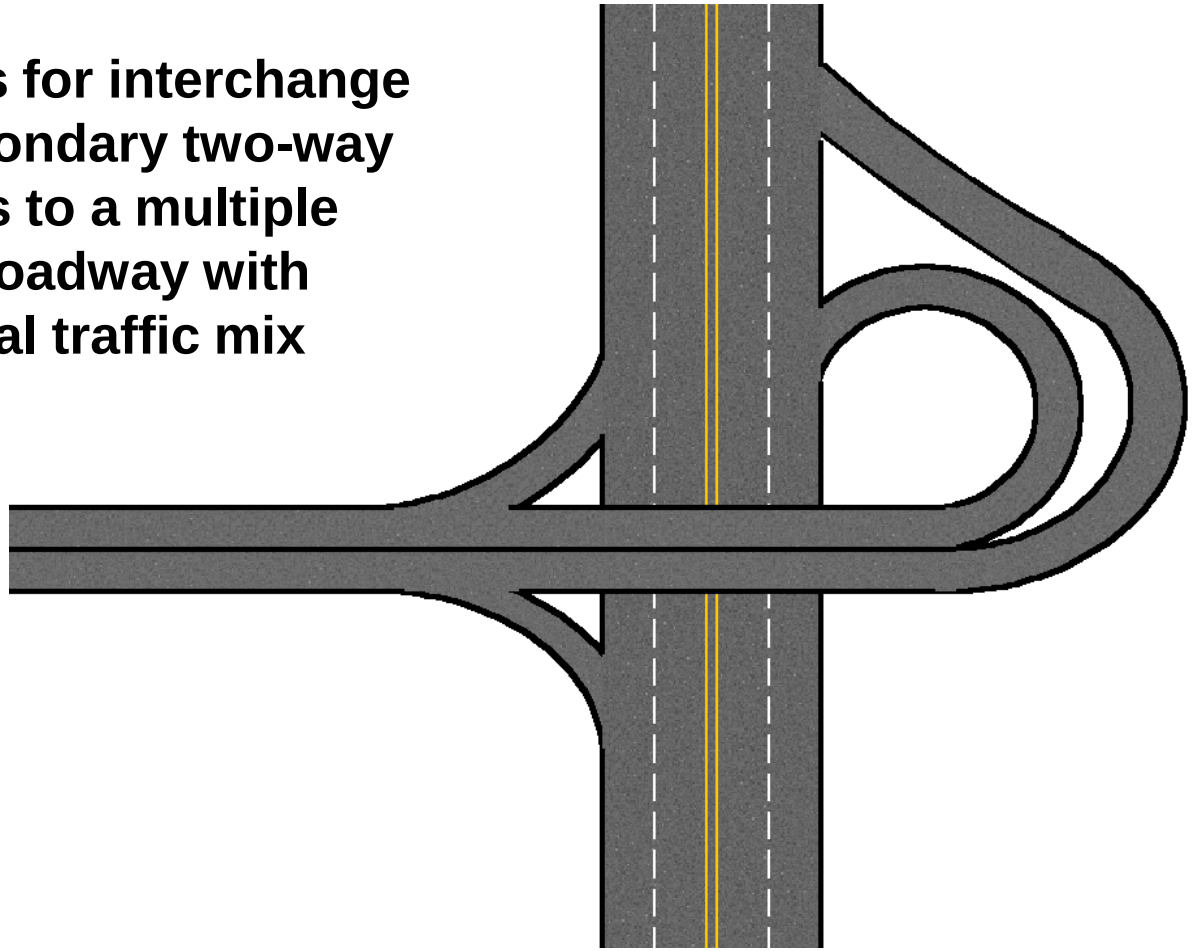
Little room available for left turns onto freeway

Traffic can build up on the ramps creating congestion



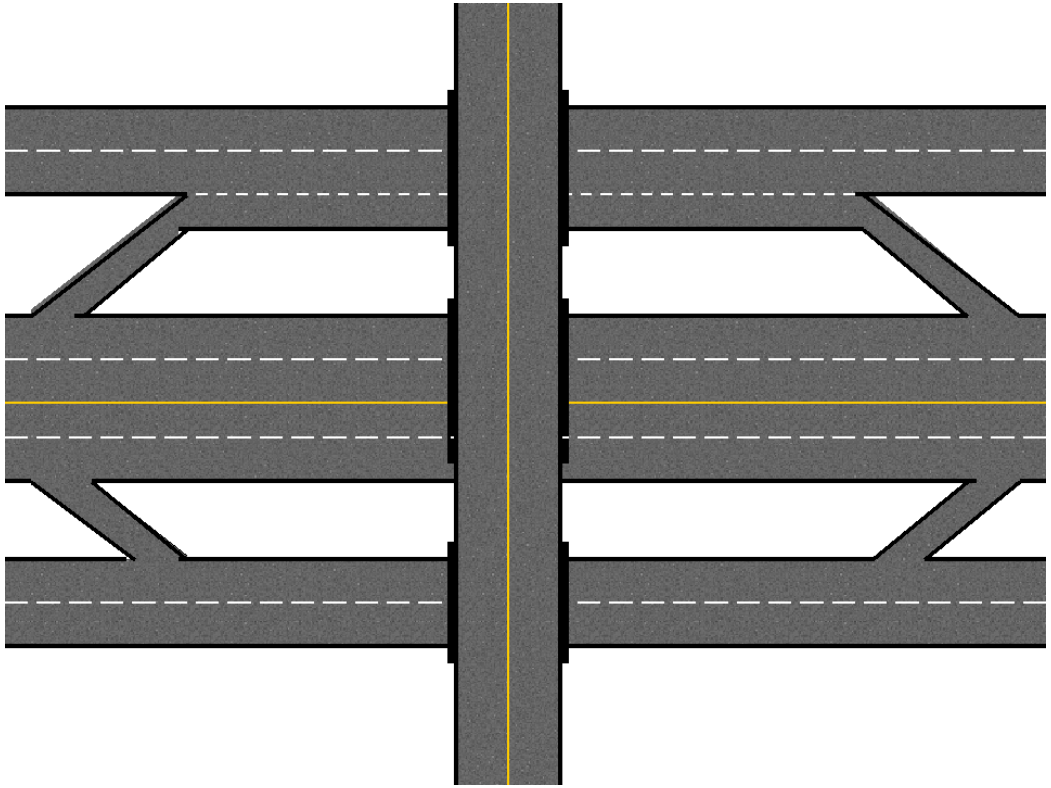
TRUMPET INTERCHANGE

Allows for interchange of secondary two-way streets to a multiple lane roadway with minimal traffic mix



FRONTAGE ROAD INTERCHANGE

Allows for interchange of vehicles using parallel secondary two-way or one-way roadways and a major multiple-lane roadway



Allows drivers to exit a multiple-lane roadway and use the opposing frontage road to enter the multi-lane roadway in the opposite direction

SAFETY DESIGNS

- **Pedestrians, animals, non-motorized vehicles, and slow moving vehicles are prohibited**
- **Fences restrict pedestrian and animal traffic**
- **Wide shoulders and underpasses**
- **Curves are banked**
- **Sharp curves and steep grades are reduced or eliminated**

SAFETY DESIGNS

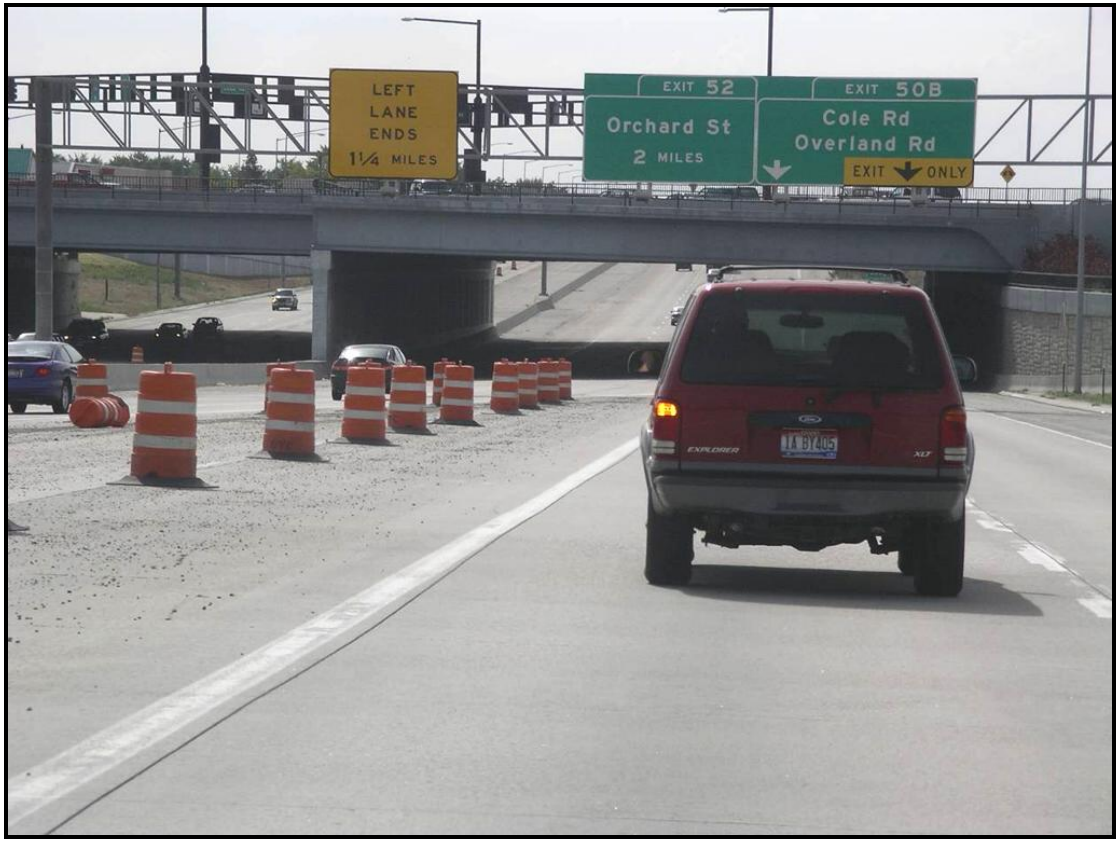
- **Breakaway support** on signs and light poles are designed to break when struck by a vehicle
  - Lessening the damage to the vehicle and injury to the occupants

Photo courtesy of
http://www.aaroads.com

- **Rumble Strips** are corrugated road sections used to alert the driver through the noise tires make when driven over them
  - Warn of approaching hazards
  - Alert the driver that they are leaving the lane

SAFETY DESIGNS

- **Guardrails** prevent vehicles that leave the roadway from impact with retaining walls, fences, or other vehicles
- **Crash barrels** lessen the impact if a vehicle collides with a bridge or overpass support



SAFETY DESIGNS

- **Changeable message signs warn drivers of traffic accidents, stalled vehicles, or other traffic problems**

SAFETY DESIGNS

- **Runaway truck ramps are on downhill grades for use by large, semi-tractor trailers that have lost brake power and are unable to stop**

INTERSTATES IN Idaho

INTERSTATE SIGNS

Interstate sign

Guide sign

Warning sign

Speed limit

INTERSTATE HIGHWAY NUMBERS

- Even numbers go east-west (I-90, I-94)
- Odd numbers go north-south (I-15)
- Numbers begin in the west and get larger as they move east
- Alternate routes are usually three-digit

INTERSTATE HIGHWAY NUMBERS

- **If the first digit is even, the alternate route goes around the city**
- **If it is odd, it leads into the city (I-184)**

Lane Markings

- **Lane markings on expressways mean the same as on any other roadway**
- **The HOV marking is unique to high occupant vehicles**

SPEED LIMITS

- **The speed limit on limited access highways in Idaho is 75 mph outside urban areas of 50,000 population and 65 mph within urban areas of 50,000 population**
- **These fixed speed limits are based on optimal road/weather conditions**

Source: Idaho Drivers Manual

MILE MARKERS

- Usually green or white and have the word MILE along with a number - some just have the number
- Mile markers show the number of miles from where the Interstate route entered a state
- The counting always begins at the state line in the south (for north-south routes) and in the west (for east-west routes)
- Mile marker numbers always get larger as drivers travel east or north

MILE MARKERS

- Knowing how to read mile markers can help drivers know exactly where they are in their destination
- Watching these numbers will be useful if a driver needs to call for assistance by giving an exact location
- Exit numbers will be the same number as the mile marker as shown in the two pictures
- Mile markers on roads off the Interstate system exist, however, the numbering system may be different from state to state—or even county to county