

# Highway Safety

Highway Safety has not always been an important consideration in the design, maintenance and operation of highways.

- Pre 1960 – The Construction Era
  - ▶ The highway safety problem was the “nut behind the wheel.”
  - ▶ Road builders had no particular responsibility to create safe driving environments.
  - ▶ Emphasis was on building lane miles of roadway (e.g., the Eisenhower Highway System).
- 1960 to 1966 – The Campaign Era
  - ▶ People began to realize the toll of highway collisions
  - ▶ The idea that road designers should build fault tolerance facilities began to take hold
  - ▶ Ralph Nader’s “Unsafe at any Speed” published in 1965.
  - ▶ Culminated in the 1966 Highway Safety Act



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# Highway Safety

Highway Safety has not always been an important consideration in the design, maintenance and operation of highways.

- 1970 to 1980 – The Action Era
  - ▶ New programs and legislation.
  - ▶ Lots of research.
  - ▶ Spend big bucks.
- 1980 to present – The Priority Era
  - ▶ Not enough money to do everything that needs to be done.
  - ▶ Find ways to prioritize spending and improvements to get the most benefit for the least cost.
  - ▶ Management approaches:
    - Safety Audits
    - Safety Management
    - Cost Effectiveness
    - Value Engineering



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# Who's Who in Highway Safety

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There are many “players” involved in building, maintaining and operating safe highways. All the “players” fall into four groups. The groups do not all have the same agenda – they push, prod and poke each other into action.

- The Federal government
  - Minimize Federal spending
  - Maximize societal good
  - Keep the advocacy groups at bay
- State governments
  - Minimize State spending
  - Keep the Feds happy
  - Keep local constituents happy
- Highway users
  - Get the States and Feds to spend more money
  - Maximize safety and mobility
- The “Quasi” groups
  - Try to mediate between groups

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# Who's Who in Highway Safety

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## The Federal Government

- The U.S. Congress
  - ▶ Congress passes the legislation that US DOT implements
    - National Highway Safety Act of 1966.
      - Established the Department of Transportation including the FHWA and NHTSA.
      - The beginning of the “Action Era.”
    - Code of Federal Regulations (CFR), Title 23.
      - Important safety related legislation in Appendix of the text.
      - Example: 23 CFR 625; Highway Design Standards
    - Interstate Surface Transportation and Equity Act (ISTEA) of 1993.
    - Transportation Equity Act for the 21st Century (TEA21) of 1998.

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# Who's Who in Highway Safety

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## The Federal Government

- US Department of Transportation (DOT)
  - ▶ Federal Highway Administration (FHWA)
    - Design standards for the National Highway System (NHS).
    - Cost sharing on construction (80/20 rule), safety improvement projects and research.
    - Motor carrier (e.g., truck) safety.
  - ▶ National Highway Traffic Safety Administration (NHTSA)
    - Design rules for the production of automobiles and trucks (crash test ratings).
    - Public awareness campaigns for drunk driving, seat belt use, child safety seat, etc.
    - Accident statistics.

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# Who's Who in Highway Safety

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## The Federal Government

- Other DOT Agencies
  - ▶ Bureau of Transportation Statistics (BTA)
  - ▶ Federal Railroad Administration (FRA)
  - ▶ National Transportation Safety Board (NTSB)
  - ▶ Federal Aviation Administration (FAA)
  - ▶ Coast Guard (USCG)

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# Who's Who is Highway Safety

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## State and Local Governments

- Departments of Transportation
  - Build, maintain and operate the roadways.
  - Design standards for roadways.
  - DOTs work with FHWA but are completely separate agencies.
- Law Enforcement Agencies
  - Enforce traffic laws (e.g., speeding, reckless driving, drunk driving, etc.)
- Governor's Highway Safety Representative
  - Primarily educational programs involving seat belt use, drunk driving, child restraints, etc.
  - GHSR works with NHTSA.



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# Who's Who in Highway Safety

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## Highway Users

- Citizens, trucking companies, etc.
- Advocacy groups
  - Mother's Against Drunk Driving (MADD)
  - Trucking associations (ATA)
  - American Automobile Association (AAA)
  - Etc.
- Trade associations
  - American Road and Transportation Builder Association (ARTBA)
  - Associated General Contractors (AGC)



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# Who's Who in Highway Safety

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## The Quasi Groups

- American Association of State Highway and Transportation Officials (AASHTO)
  - Essentially a lobbying organization of all the States that:
    - Develops design standards
    - Lobbies the Federal government
    - Acts as a clearing house of information for the States.
- Transportation Research Board
  - Funded both by FHWA and the States
  - Acts as a research arm of AASHTO
  - Is a part of the National Academy of Sciences (funded by Congress) but operates independent of the Federal government.

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# Who's Who in Highway Safety

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The roles of these groups are very blurry and they often overlap and conflict. This can make understanding how and why specific things are done complicated.

- Design Standards -- used on a specific highway project depend on the source of funding
  - If any Federal money is involved, the standards used must be approved by the FHWA.
  - If only State funding is used, the State can use whatever standards it wants (usually they are similar to AASHTO recommendations).
  - If local roads are built using some State funding State design guidelines usually apply.
  - If only local money is used the local city or town engineer can use whatever standards he feels are appropriate.

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# Who's Who in Highway Safety

- Interstate Highways

- Part of National Highway System (NHS).
- Constructed, maintained and operated by the State DOTs.
- Federal funds usually used (80/20) so plans must be approved by FHWA.
- Example: I-290.



- US Routes

- Usually part of National Highway System (NHS).
- Constructed, maintained and operated by the State DOTs.
- Federal funds usually used (80/20) so plans must be approved by FHWA.
- Example: US 20



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# Who's Who in Highway Safety

- State Primary Routes

- Sometimes part of National Highway System (NHS).
- Constructed, maintained and operated by the State DOTs.
- Federal funds may be used (80/20). Plans must be approved by FHWA if Federal funds are used.
- Example: MA Route 9



- State Secondary Routes

- Usually not part of the National Highway System (NHS).
- Constructed, maintained and operated by the State DOTs with varying levels of assistance from local jurisdictions.
- Federal funds usually not used so only State guidelines apply.



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# Who's Who in Highway Safety

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- Local Roads and Streets

- Not part of the National Highway System (NHS)
- Constructed, maintained and operated by local cities and towns.
- State money may or may not be used. If State money is not used State guidelines may not apply.
- Example: Boynton Street.
- Urban clearzones.

Boynton Street



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