

# Highway Planning

Highway and Transportation  
Engineering

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# Transportation

- Life in communities has changed over the years.
- One of those changes is in transportation.
- Transportation is a way of moving people or things from one place to another.

# Transportation Engineering

- **Transportation engineering** or **transport engineering** is the application of technology and scientific principles to the planning, functional design, operation and management of facilities for any mode of transportation in order to provide for the safe, efficient, rapid, comfortable, convenient, economical, and environmentally compatible movement of people and goods.

# Traffic Engineering

- The phase of Transportation Engineering which deals with the planning, geometric design and traffic operations of roads, streets and highways, their networks, terminals, abutting lands, and relationships with other modes of transportation.

# Modes of Transportation

## Land

- Covered Wagon
- Train
- Subway
- Bicycle
- Motorcycle
- Car
- Bus

## Water

- Canoe
- Steamboat
- Ferry
- Passenger Ship
- Submarine

## Air

- Hot Air Balloon
- Plane
- Helicopter
- Rocket
- Space Shuttle

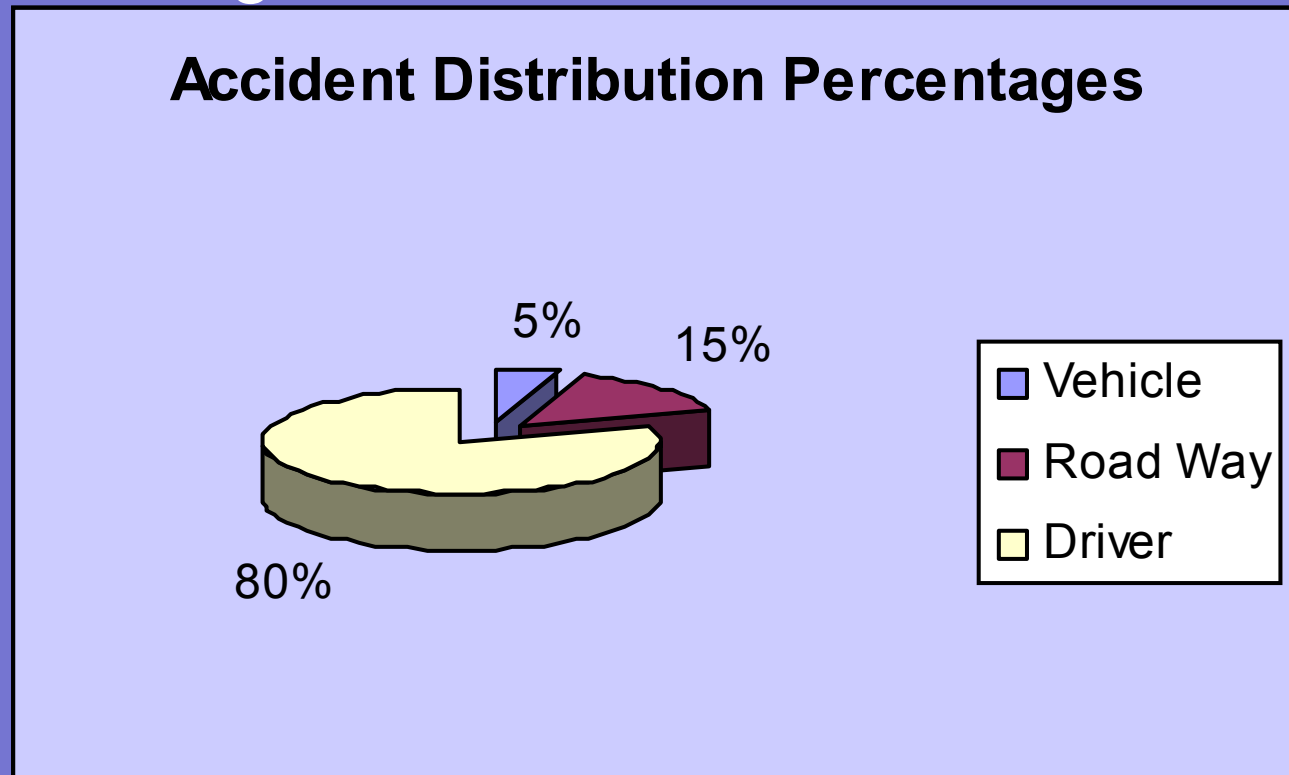
# Elements of Transportation

There are three main elements of automobile transportation:

- The road users (Drivers and pedestrians)
- The vehicle
- The road way and geometric design

# Elements of Transportation

- The three basic elements of transportation has the following accident distribution percentages.



# Highway Planning

- **Planning** is the process of thinking about the activities required to achieve a desired goal.
- Highway transportation system plays an important role in the life of the community
- The transportation problem touches on almost every phase of modern life i.e.
  - Industry
  - Agriculture
  - Goods Movement



# Highway Planning

- Highway planners must continually be aware of the heavy responsibilities they bear.
- Thus in preparing schemes for a single highway or complicated highway network, care must always be taken to ensure that:
  - Project is not treated in isolation
  - It must be treated as an integral part of whole Transportation System

# Highway Planning

- Entire planning process should be regarded as a definite step in the advancement of environmental progress and not just as a concrete attempt to relieve congested traffic conditions.

# Form of Highway Planning

- Highway planning must always be considered in the light of long-term effects.
- It is important because of:
  - Influence of highway planning on community
  - Demands placed by community

# Form of Highway Planning

- Increasing population demands proper highway planning. Growth rate of traffic is very high as compared to development in highway system.
- As population is concentrated in urban areas, particularly heavy increase in the number and usage of vehicles is expected in these areas.

# Form of Highway Planning

- Highway planners will have to give special consideration to the role of the vehicles in the urban areas.
- Following factors must be considered:
  - Increase in population
  - Growth of number of vehicles
  - Increase in use of vehicles
  - Density of growth in different areas
  - Existing state of highway systems

# Transportation Planning

- The process by which new transportation facilities (and improvements to the old facilities) are systematically designed, adequately tested, and their future construction is properly programmed.
- Comprehensive transportation planning considers all modes (mass transit, automobile, air, rail, etc.) of transportation and treats them all as a single system.

1.Scope and Purpose

2.Economics

3.Highway Use

4.Classification of Highway System

5.Design Standards

6.Motorway System Needs

7.Classified and Un-classified Road Needs



**Highway Studies Report**

8.Urban Needs

9.Government Aid

10.Maintenance

11.Administration

12.Programming and Priorities

13.Financial needs

14.Sources of Revenue

15.Recommendation  
s

# Scope and Purpose of Report

- Serves as an introduction and outlines the scope and purpose of the report
- Refers to Authorization for the study to outside agencies making or assisting in the report and co-operating authorities

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# Economics of Highway Transportation

- Effects the highway system and the development of the area concerned
- Discusses economic and social resources and how they are affected by the various transportation systems

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# Highway Use, Existing & Future

- Past performance and future expectations
- Volume and pattern of traffic for the various classes of highway
- Anticipated & historic trends
- Commercial vehicle factors
- Statistical Data:
  - Registration
  - Person per Vehicle etc.

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# Examination of Classification of Highway System

- Need for classification or re-classification
- Criteria for classification
- Definitions

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# Standards of Design

- Geometric
- Structural
- Right-of-way

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# Motorway and Trunk Road System Needs

- Study of both rural and urban sections
- Set forth advantage of motorway design standards

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# Class-I, Class-II, Class-III and Unclassified Road Needs

- Method of study
- Co-operative efforts of local authorities
- Existing state

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# Urban Street Needs

- Correlate arterials, service roads and motorways
- Set forth present deficiencies and recommended modernization programme

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# Government Aid

- Brief history of the governmental grant programme
- Anticipated local and national participation in the proposed plan

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# Maintenance

- Size and scope of maintenance activities
- Effects of modernization on maintenance cost, and comparison of existing and anticipated costs

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# Administration

- Administrative problems
- Recommendations for administrative reorganization
- Highway operation of servicing needs, including law enforcement and general traffic management
- Estimates of present and future administrative costs

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# Programming and Priorities

- Financial programming for the total needs
- Programme by urgency of inadequate sections

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# Financial Needs & Highway Revenues

- Comparison of needs costs with available revenues
- User benefits and benefits to property, industry and community as compared to costs
- Additional revenues required

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## Sources of Additional Revenue

- All possible sources of additional revenue should be taken into account and to be measured against yardsticks of financial needs and possible increases in cost

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# Recommendations

- Summarize previous sections
- Set forth plan for solution of problem in a clear and concise manner
- Conclusion

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