Chapter II
Highway Route Surveys and Location

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Course Outline

Highway I course outline

Overview of the highway planning and development process

Chapter 1.ppt

Chapter 1

Highway Route Surveys and Location

CHAPTER 2
Lecture Overview

• Introduction
• Steps in route location
• Guidelines for Alignment and Route Location
• Information gathering
  – Reconnaissance survey
    • Desk study
    • Field study
  – Preliminary location survey
  – Final location survey
Introduction

• **Alignment**: The position or the layout of the central line of the highway.
  – *Horizontal alignment* includes straight and curved paths.
  – *Vertical alignment* includes curves and gradients.

• The aim of alignment selection process is to find a location for the new road that will result in the *lowest total construction, land, traffic and environmental costs*.

• Provide the basic information for structural design, as well as the economic analysis
Steps in route location

- Know the termini points
- Identify and locate
- Conduct preliminary and reconnaissance surveys
- Select a corridor.
- Possible centerlines
- Examine each of the alternative alignment
- Final design
Information gathering

• *Aid in the decision making process*
  – Reconnaissance survey
  – Preliminary location survey
  – Final location survey
Reconnaissance survey

- The purpose of the reconnaissance survey is to evaluate the feasibility of one or more corridor routes for a highway between specific points that may be many kilometers away.

- The greatest single money-saving phase
  - Desk study
  - Field study
Reconnaissance survey

Desk study

• Study all available information in the office,
  • Aerial Photography
  • Geological maps
  • Topographic Map
  • Published literatures:
Reconnaissance survey

Field study

• It involves inspection of each band (identified during the desk study) to determine the most corridor feasible route based on some basic criteria.
  • Soil type and depth
  • Slope stability
  • Percentage of rock in excavation
  • Terrain classification
  • Bridging requirements etc…

Results of these studies are presented in a reconnaissance report
Preliminary Location Survey

• Is a large-scale study of one or more feasible corridor routes.

• Consists of running an accurate traverse line along the routes already recommended as a result of reconnaissance survey
  — Establishing primary Traverse
  — Record all topographical features
  — Levelling work
  — Hydrological Data
  — Soil Survey

• Aerial surveys and Ground surveys
Final Location Survey

- Serves the dual purpose to fix the centre line of the selected alignment and collect additional data for the design and preparation of working drawings.
  - Pegging the centre line
  - Centre-line Levelling
  - Cross-section Levelling:
  - Intersecting Roads
  - Ditches and Streams
Thank You!