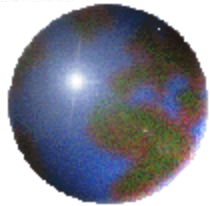




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***SCHOOL OF CIVIL AND ENVIROMENTAL
ENGINEERING***



***HIGHWAY ENGINEERING I
CENG 3202***

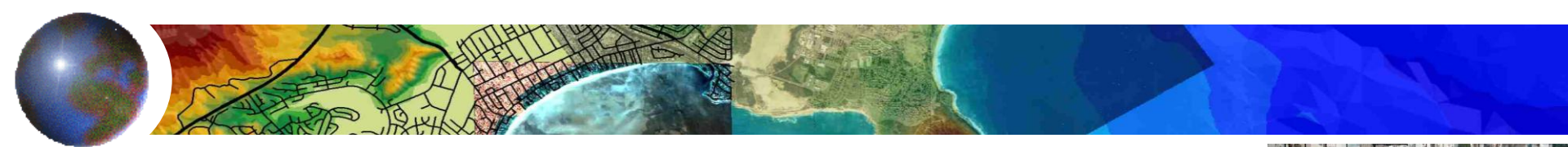
Chapter I

***Overview of the highway planning
and
Development process***



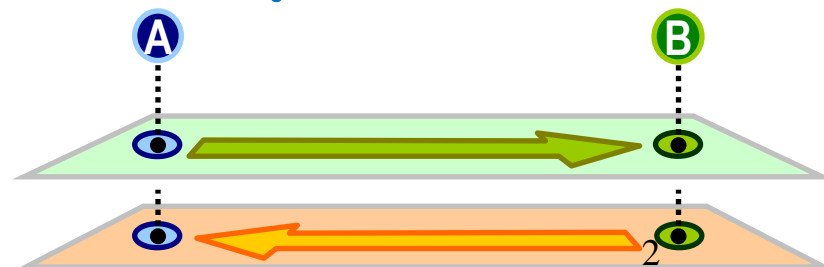
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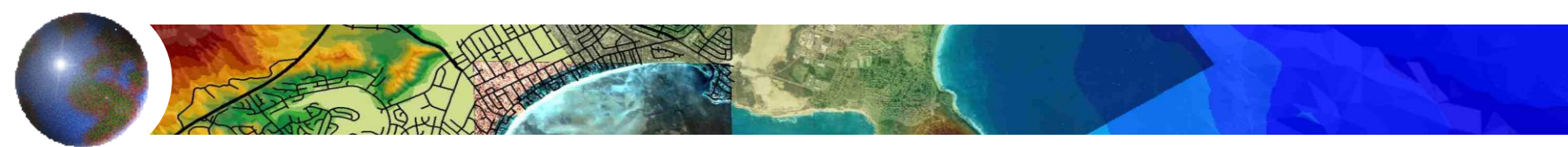
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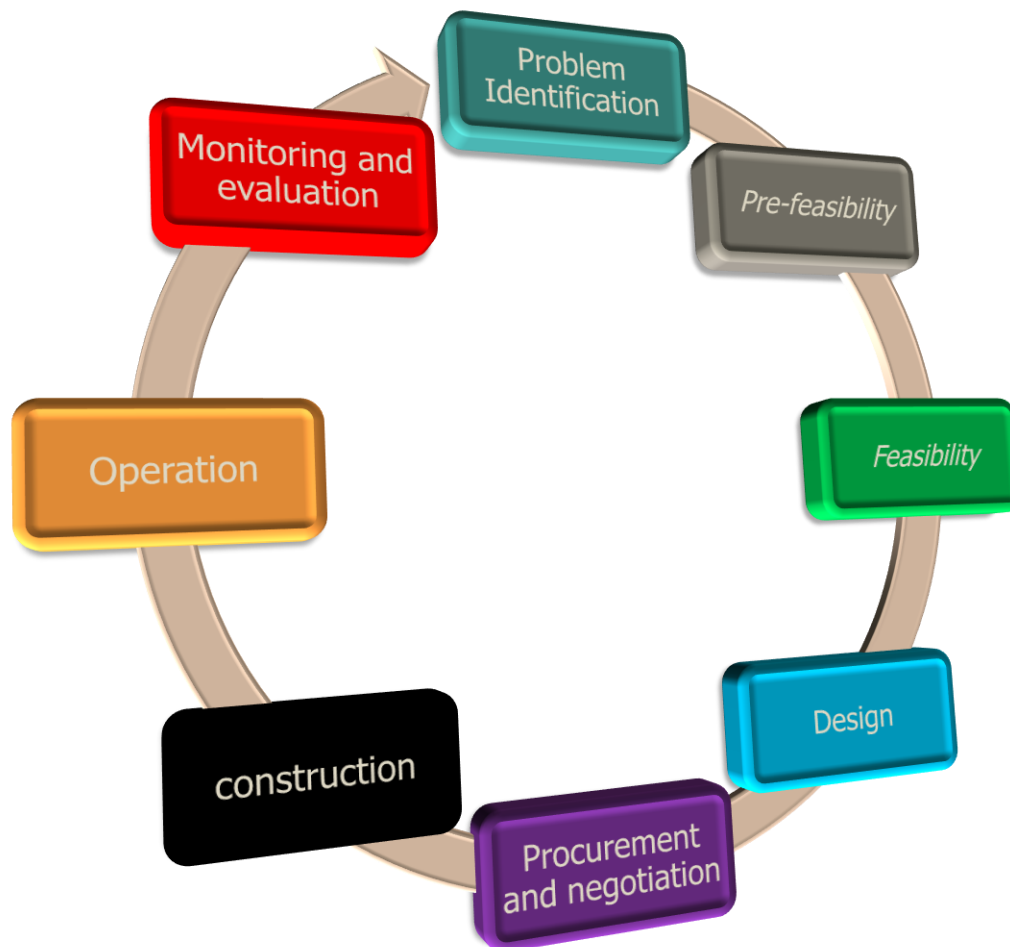
Definition

- A **highway** is considered a conduit that carries vehicular traffic from one location to another.
- **Highway engineering deals:**
 - with provisions for meeting public needs for highways;
 - environmental impact of highways;
 - planning, design, construction, maintenance, and rehabilitation of highways
 - access to and exit from highways
 - economics and financing of highway construction
 - and safety of those using or affected by the use of highways.
 - traffic control





Highway Project Cycle





Problem Identification



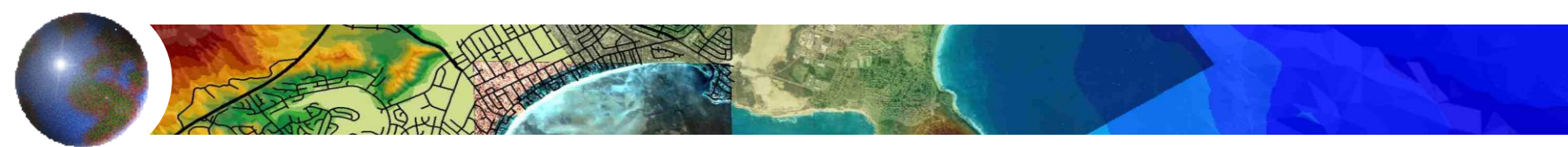
- The first stage of the cycle is to find potential projects.
- The planning process takes into account government policies and programmers (in all relevant sectors) which impact on transport development.
- Definition and prioritization of transport problems within regional or urban framework.



Pre-feasibility Study

Pre-feasibility

- Problem location (e.g. corridors identified);
- Preliminary traffic and economic assessment; broad environmental and engineering assessment.
- Identification of transport solutions that are likely to be feasible.



Feasibility Study/ Preliminary Engineering Design

Feasibility

- Some solution options
- Detailed traffic, environmental, economic and engineering assessment; detailed costing
- Preferred solution and recommendation for Final Engineering Design (route alignment)



Factors to Consider During Planning

- How will the proposed transportation improvement affect the general physical character of the area surrounding the project?
- Does the area to be affected have unique historic or scenic characteristics?
- What are the safety, capacity, and cost concerns of the community?





Final Design



- Detailed engineering assessment
- drawings, bills of quantities and other tender/contract documents



Procurement & negotiation (pre-construction)

Procurement
and negotiation

- Specified right-of-way
- Implement land acquisition and resettlement program.
- Undertake tendering and contract process
- Alignment ready for construction; appointment of contractors/supervising engineers; project management plans

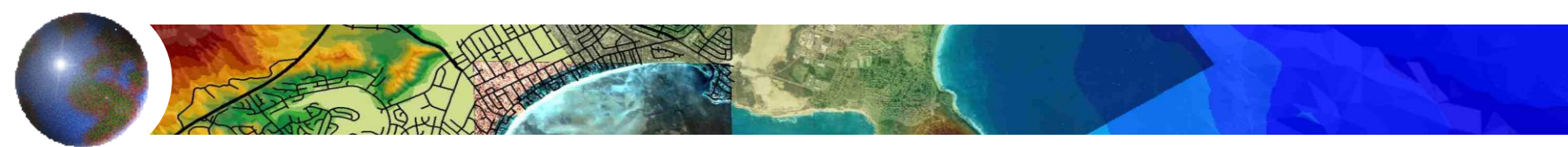


Implementation (construction)

construction

- Build to design specification

- Completed project hand-over



Operation

Operation

- Maintenance program;
- Enforcement of traffic law and regulations;
- operation of asset by road manager



Monitoring and Evaluation

- This consists of looking back systematically at the successful and unsuccessful elements of the project experience to learn how planning can be improved in the future.
- Traffic and road condition surveys;
- Social and environmental impact surveys

