The Environmental Impact Statement

Purpose for EIS

- Serve as a Action-Forcing Device To Ensure NEPA Policies and goals
- Provide Full and Fair Discussion of Environmental Impacts
- Analyze Potential Consequences of Alternatives
- Inform the Public
- Basis for Making Informed Decisions

Types of EISs

- Project Specific EIS
- Programmatic EIS
  - Broad Federal Actions (regulations/policy/plans)
  - Focus on:
    - Broader geographical area
    - Cumulative impacts
    - Policy-level mitigation
  - Usually no site evaluation
  - Tiering
- Legislative EIS

EIS Process

- Define Purpose and Need
- Define Preferred Action
- Notice of Intent
- Scoping
  - Public
  - Agency
- Identify Alternatives
- Screen Alternatives
- Technical Studies
  - Existing Conditions
  - Impacts
  - Identify potentially significant impacts

EIS Process (continued)

- Mitigation
- Draft EIS (internal circulation)
- Notice of Availability
- Circulate Draft EIS (public/agencies)
- Public/Agency Comment
- Public Hearing (meeting)
- Respond to Comments
- Final EIS
- Record of Decision

Statement of Purpose and Need

- *Need* – broader underlying social need to which the agency is responding
- *Purpose* – specific objectives of propose action

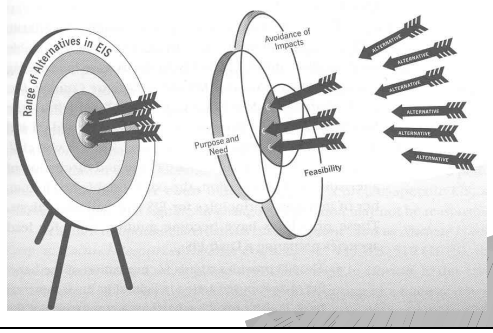
Scoping

- Start Scoping in Early Planning Stages
- Invite Participation of:
  - Affected Federal, State and Local Agencies
  - Affected Native American Tribes
  - Interested Parties
  - Public
- Purpose:
  - Determine the Scope and Issues to Analyzed in Depth
  - Identify Additional Alternatives
  - Identify and Eliminate Issues
  - Identify Other Federal Actions
  - Indicate Timing of EIS Preparation

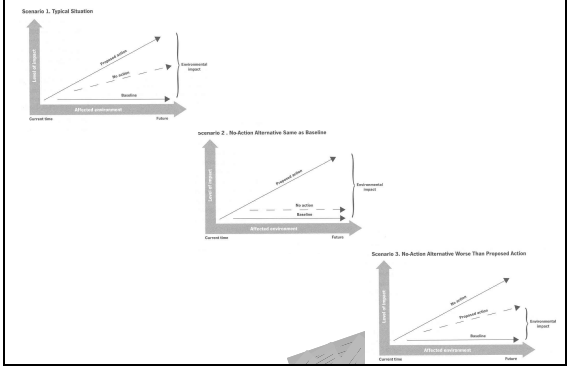
Alternatives

- EIS must explain why certain alternatives were eliminated
- Alternative to consider
  - Alternative ways to meet purpose and need
  - No-Action alternative
  - Alternatives outside Lead Agency's jurisdiction
- Rigorous evaluation and comparison required
- Identify preferred alternative in
  - Draft EIS, if one exists
  - Final EIS
- Identify environmentally preferable alternative
- Describe mitigation measures for alternatives

Screening of Alternatives



Possible Impact Scenarios



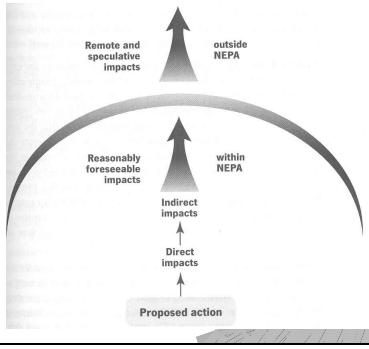
Technical Studies (Environmental Attributes)

- Traffic and Transportation
- Air Quality
- Noise
- Natural and Biological Resources
  - Geology
  - Groundwater (Quality/Quantity)
  - Soils
  - Surface Water (Quality/Quantity)
  - Floodplains
  - Terrestrial Vegetation (includes E&T Species)
  - Terrestrial Wildlife (includes E&T Species)
  - Aquatic Biota (includes E&T Species)
  - Wetlands

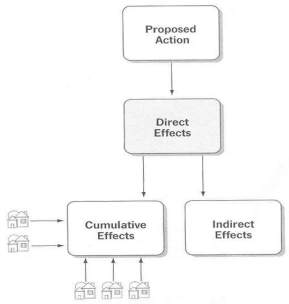
Environmental Attributes (cont.)

- Cultural Resources
  - Prehistoric
  - Historic
- Socioeconomics
  - Displacements
  - Business
  - Demographics
  - Cohesive Communities
  - Land Use and Zoning
  - Regional/Community Plans
  - Farmland
  - Aesthetics
  - Local Fiscal
  - Economics
  - Public Services
  - Infrastructure
- Energy
- Hazardous Materials

Potential Impacts



Types of Effects



Mitigation of Impacts

- Discussion of mitigation required by CEQ Regulations
- All impacts
- Not Required to implement mitigation
- Types of mitigation for significant impacts
  - Avoid
  - Minimize
  - Rectify
  - Reduce
  - Compensate

Considerations in Preparing an EIS

- Analytic rather than encyclopedic
- Impacts discussed in proportion to significance
- Discuss how alternatives/decisions will achieve requirements of NEPA
- Alternatives discussed limited to those expected to be acted on
- Systematic and interdisciplinary
- Should be means to assess proposed action vs. justifying decision
- Plain language

Content of an EIS

1. **Cover Sheet (1 page)**
   - Title of the Action
   - Action's Location
   - EIS Designation
   - Lead Agency and Cooperating Agencies
   - Agency POC
   - Date by Which Comments Must Be Received
   - Abstract (1 paragraph)
2. **Summary (NTE 15 pages)**
   - Summarizes EIS (EIS Format)
   - Conclusion
   - Areas of Controversy
   - Issues to Be Revolved
3. **Table of Contents (NTE 6 pages)**
   - Cover All Headings and Subheadings
   - List of Figures
   - List of Tables
   - List of Abbreviations
   - List of Symbols
4. **Purpose and Need for the Action (Sections 4-7: NTE 150 pages; 300 pages max)**
   - Need or Requirement
   - Purpose or Objective

Content of an EIS (cont.)

5. **Alternatives (Including the Proposed Action)**
   - Description of Each Alternative Considered
   - Alternatives Not Rigorously Explored and Reasons
   - Environmental Consequences of Alternatives (Comparative Form)
   - Preferred Alternative
   - Mitigation
6. **Affected Environment**
   - Describe Affected Environment
   - Necessary Description Relevant to Impacts
   - Summarize, Consolidate or Refer (Minimize Bulk)
7. **Environmental Consequences**
   - Direct Effects (Not Significant/Significant)
   - Indirect Effects (Not Significant/Significant)
   - Conflicts With Other Federal, State, Local Plans
   - Energy Requirements (or Savings)
   - Natural or DepletableResource Requirements (or Savings)
   - Mitigation Measures
8. **List of Preparers (NTE 2 pages)**
   - Name and Qualifications of Preparers
   - Reference Sections Prepared
9. **Distribution List**
   - Identify Agencies Whose Comments Are Required
   - Location Where Public Access Is Available
10. **Index**
11. **Appendices**
    - Material Prepared for EIS
    - Analysis to Support Conclusions

Timing of EIS Process

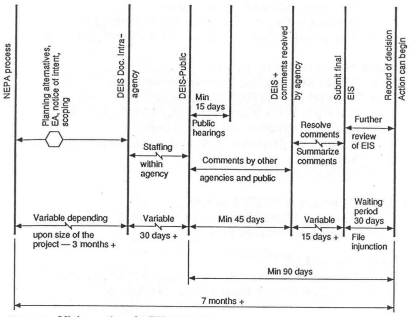


Figure 4.4 Minimum times for EIS processing.

Supplement EIS

- Supplement to Draft or Final EIS
- Required if:
  - Substantial changes in proposed action relevant to impacts
  - New information or circumstances relevant to impacts
- Process same as EIS (except no scoping/NOI)

Assessment Process

- Identify Potential Impacts
  - Matrix
  - Networks
  - Check Lists
- Determine Study Area
- Determine Existing Conditions
  - Published Documents
  - Interviews
  - Primary Data Collection
- Identify Standards
  - National
  - State
- Determine Worst Case Conditions
- Predict Impacts
  - Qualitative
  - Quantitative
- Assess Significance of Impacts
  - Standards
  - Professional Judgment
- Mitigation

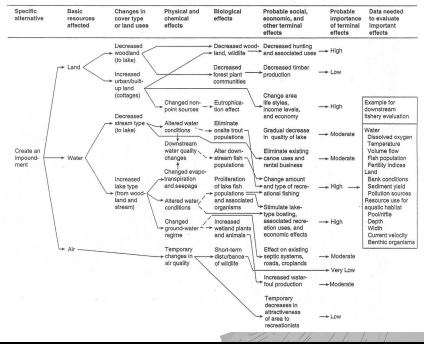
Checklist of Potential Effects

	Yes	Maybe	No	Comment
Traffic/Trans				
Air Quality				
Noise				
Natural/Bio. Resources				
Cultural Resources				
Socio-economics				
Energy				
Hazardous Materials				

Matrix of Potential Effects

	Clearing	Excava-tion	Grading	Comp-action	Paving	Use/Main-tenance
Traffic/Trans						
Air Quality						
Noise						
Natural/Bio. Resources						
Cultural Resources						
Socio-economics						
Energy						
Hazardous Materials						

Network of Potential Effects



Physical Environment

- Geology/Soils/Groundwater
- Climate
- Surface Water Resources
- Air
- Noise

Assessing Impacts to Geology

- **Identify Source of Potential Impacts**
  - Overpumping Groundwater
  - Construction of Steep Slopes
  - Logging on Steep Slopes
  - Construction of Jetties
  - Reservoirs
  - Seismic Issues - Affect Project
  - Mineral Takings
- **Determine Existing Conditions**
  - USGS Geological Atlases
  - Bureau of Mines
  - DOGAMI
  - State/Local Planning Studies (Hazard Areas/Seismic)
- **Identify Standard**
  - State
  - Local
- **Impact Prediction**
  - Engineering Studies
  - Similar Projects in Area
- **Assess Significance of Impacts**
  - Percentage
  - State/Local Policies
  - Human and Ecological Down-slope Affects
- **Mitigation**
  - Limit Groundwater Use
  - Move Project from Hazard Areas
  - Seismic Reinforcement

Assessing Impacts to Soils

- **Identify Source of Potential Impacts**
  - Site Clearing
  - Compaction
  - Change in Land Use
  - Hazardous Materials
  - Change Nutrients
- **Determine Existing Conditions**
  - Soil Survey
  - Field Testing
- **Identify Standard**
  - State
  - Local
- **Impact Prediction**
  - Erosion (Universal Soil Loss Equation)
  - Compaction (Engineering Studies)
  - Change in Chemistry (Mass-balance Calculations)
- **Assess Significance of Impacts**
  - Percentage
  - State/Local Policies
  - Ecological (e.g. sedimentation of salmon bearing streams)
- **Mitigation**
  - Re-Vegetate Area
  - Limit Time of Year
  - Barriers
  - Best Management Practices

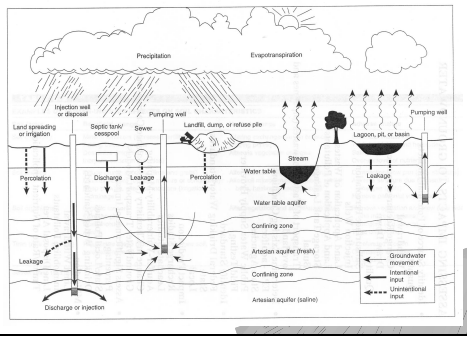
Assessing Impacts to Groundwater

- Identify Source of Potential Impacts
  - Quantity
    - Withdrawal
    - Change Recharge Source
    - Draw Down
  - Quality
    - Subsurface Percolation
    - Injection Wells
    - Land Application of Wastes
    - Land Application of Pollutants
    - Storage Tank Leakage
    - Burial
    - Transport of Wastes/Nonwastes (pipelines and overland)
- Determine Existing Conditions
  - EPA - aquifers
  - State Agencies
  - Public Water Supply Providers
  - Field Testing

Groundwater (cont.)

- Identify Standard
  - Federal Drinking Water Standards
  - State
  - Local
- Impact Prediction
  - Recharge Studies
  - Leachate Studies
  - Aquifer-Vulnerability-Mapping
  - Change in Chemistry (Mass-balance Calculations)
  - Groundwater Transport Models
- Assess Significance of Impacts
  - Percentage
  - State/Local Policies
  - Drinking Water Standards
- Mitigation
  - Limit Withdrawal
  - Immobilize Pollutants
  - Line Disposal Area
  - Timing/Rate of Nutrient Applications

Sources of Groundwater Contamination



Wellhead Impacts