

Chapter 14  
(Part 2)  
Managing Large Projects and  
Programs

Carl D. Martland, "Toward More  
Sustainable Infrastructure"

# Additional Requirements for Managing Very Large Projects

- Overall project coordination
- Political coordination
- Public relations
- A capable, diverse management team

***These projects may take decades to complete!***

# Six Phases of Very Large Projects

	<b>Phase</b>	<b>Major Activities</b>
1	Pre-History	Serious problems generate public concern, debate over problem definition, and search for possible solutions
2	Conceptualization, Evaluation, and Planning	Define and analyze various possible solutions; environmental impact assessment; develop financing plans
3	Procurement	Create management team; acquire land; deal with socio-economic issues
4	Final Design	Transform conceptual design into detailed designs as basis for construction contracts
5	Construction	Manage and oversight of construction
6	Operation	Operation and maintenance of project; land use changes and socio-economic impacts

Source: Frederick Salvucci, lecture to 1.011 Project Evaluation, 2002

# Thinking About Very Large Projects

- First think about doing the right job – then think about doing the job right
- Recognize that a long time will be needed in the conceptualization phase
- Be flexible in developing hypotheses and in the use of screening analyses
- Interact with and involve a lot of people, because both knowledge and power are distributed
- EIS is critical in highlighting issues and allowing a better, more broadly conceived and more beneficial project than was originally anticipated

Source: Frederick Salvucci

# Program Management

- A program can be created to promote, implement, and monitor the performance of a set of related projects
- A program consists of:
  - Policy: defining objectives and types of projects that can be funded
  - Selection criteria
  - Funding
  - Construction Standards
  - Program management process

# Program Management Process

- Once a program is established, it is much quicker to identify, select, and implement projects
- However, it is also more difficult to challenge or revise projects
- A continuing program management process is necessary:
  - Project audits
  - Polity review
  - Review of externalities
  - Revision of program policy, criteria or funding

# The Interstate Highway System

- Begun in 1956 after two decades of debate over how best to create a system of limited access, high quality roads
- Benefits for autos and trucks widely distributed, clearly apparent to public and state and federal government
- Issues
  - Network structure
  - Funding (tolls vs. taxes and fees vs. capturing the increased land values created by the project)
  - Construction standards
  - Routing through cities (straight routes vs. routes that minimize disruption to neighborhoods)
  - Use of highway investment to address other problems

# The Interstate Highway System: Problems

- Disruption to cities sparked opposition that put some urban segments underground and eventually stopped construction of planned routes in Boston and San Francisco
- This INTERCITY transport system was heavily used for COMMUTING, sparking suburbanization and accelerating the decline of many urban centers
- Other social concerns have led many to question the public emphasis on highways:
  - Highway safety
  - Congestion
  - Air quality
  - Climate change
  - Over-dependence upon fossil fuels







## Franconia Notch, NH

Rare instance of 2-lane interstate was allowed (after intensive battle) in order to avoid destroying center of state park





Triple transport tiers in a gorge – interstate plus bike path  
on opposite side of river from Amtrak (Colorado)

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