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

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