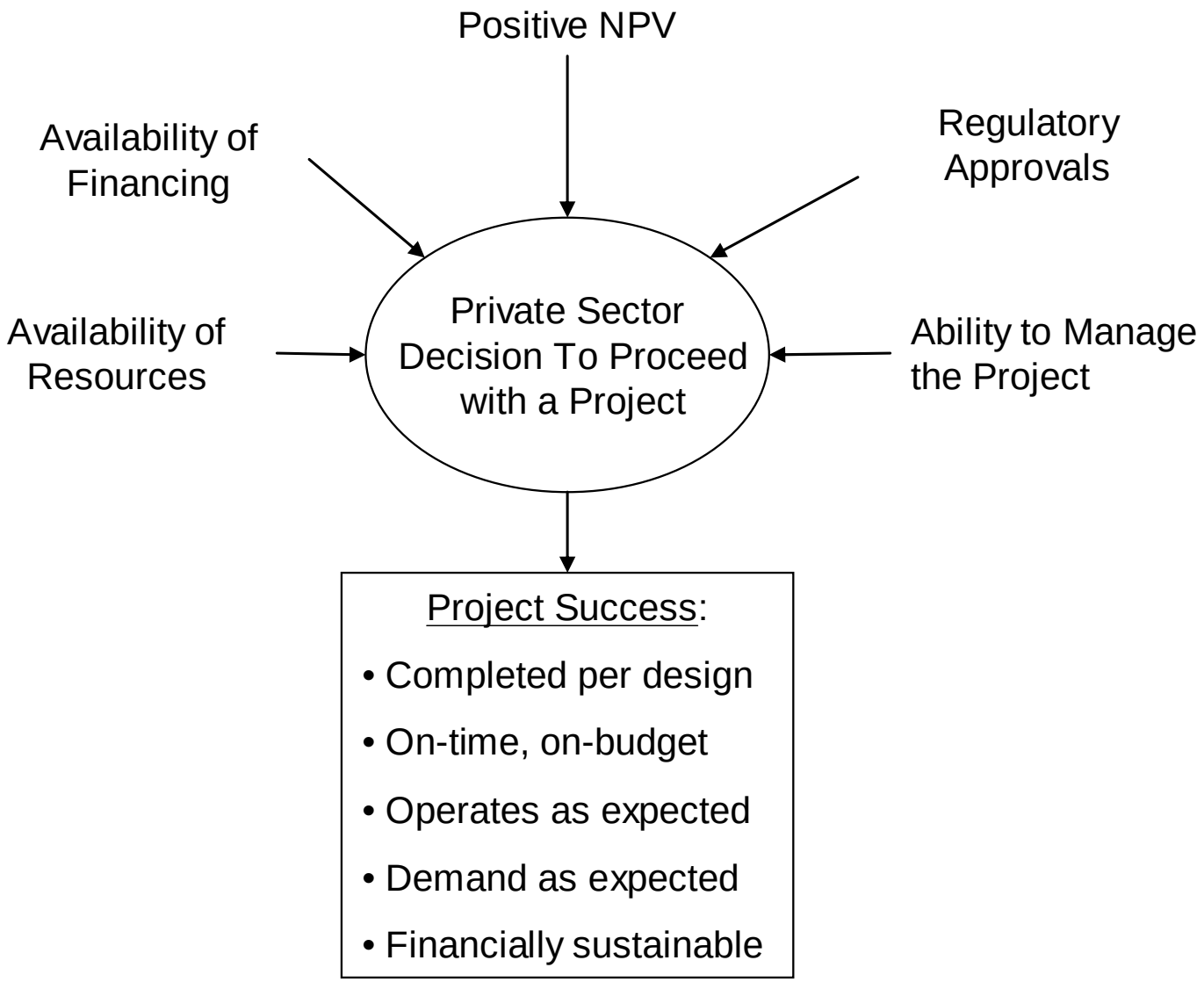
Public-Private Partnerships

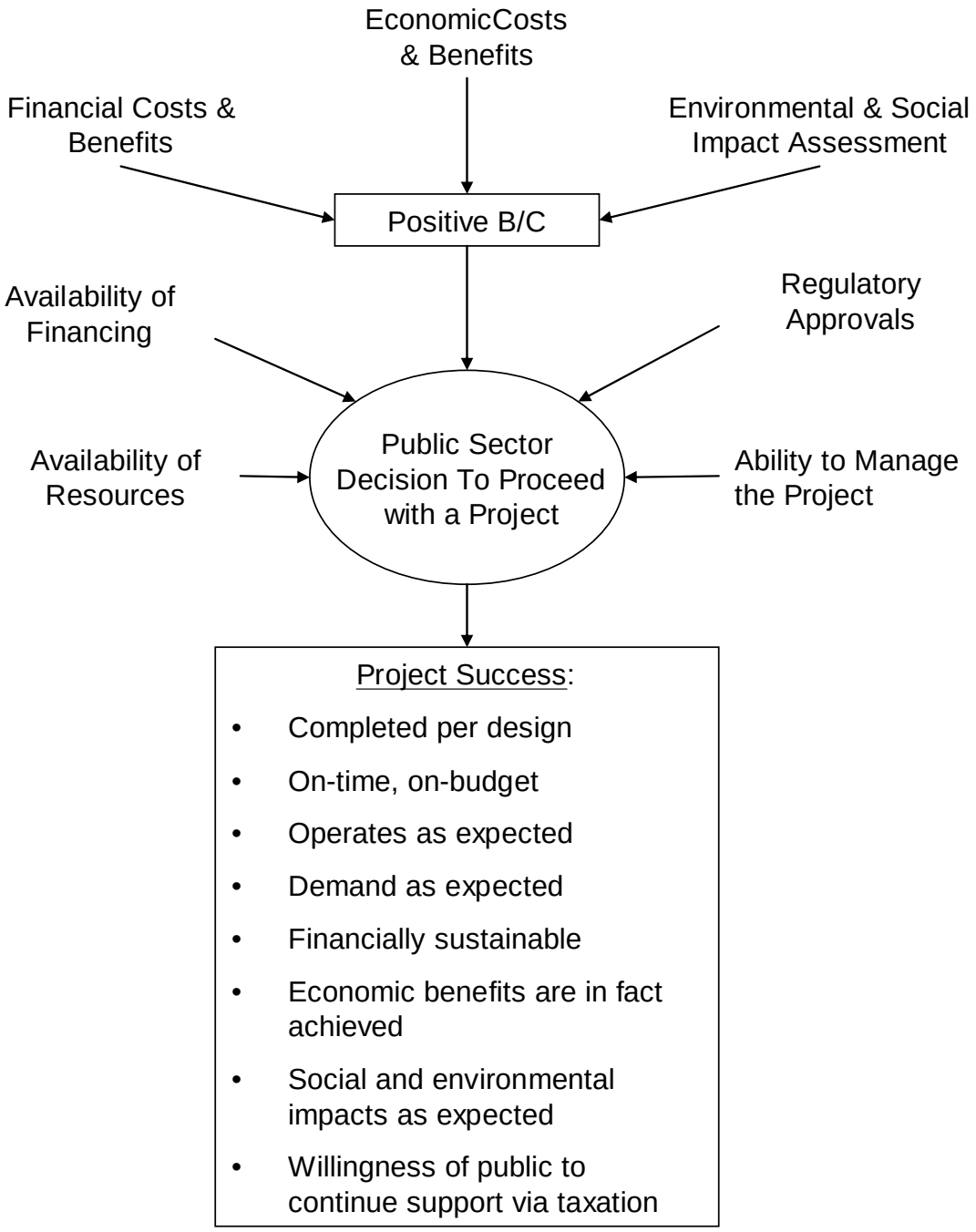
Toward More Sustainable Infrastructure:
Project Evaluation for Planners and Engineers

Chapter 12

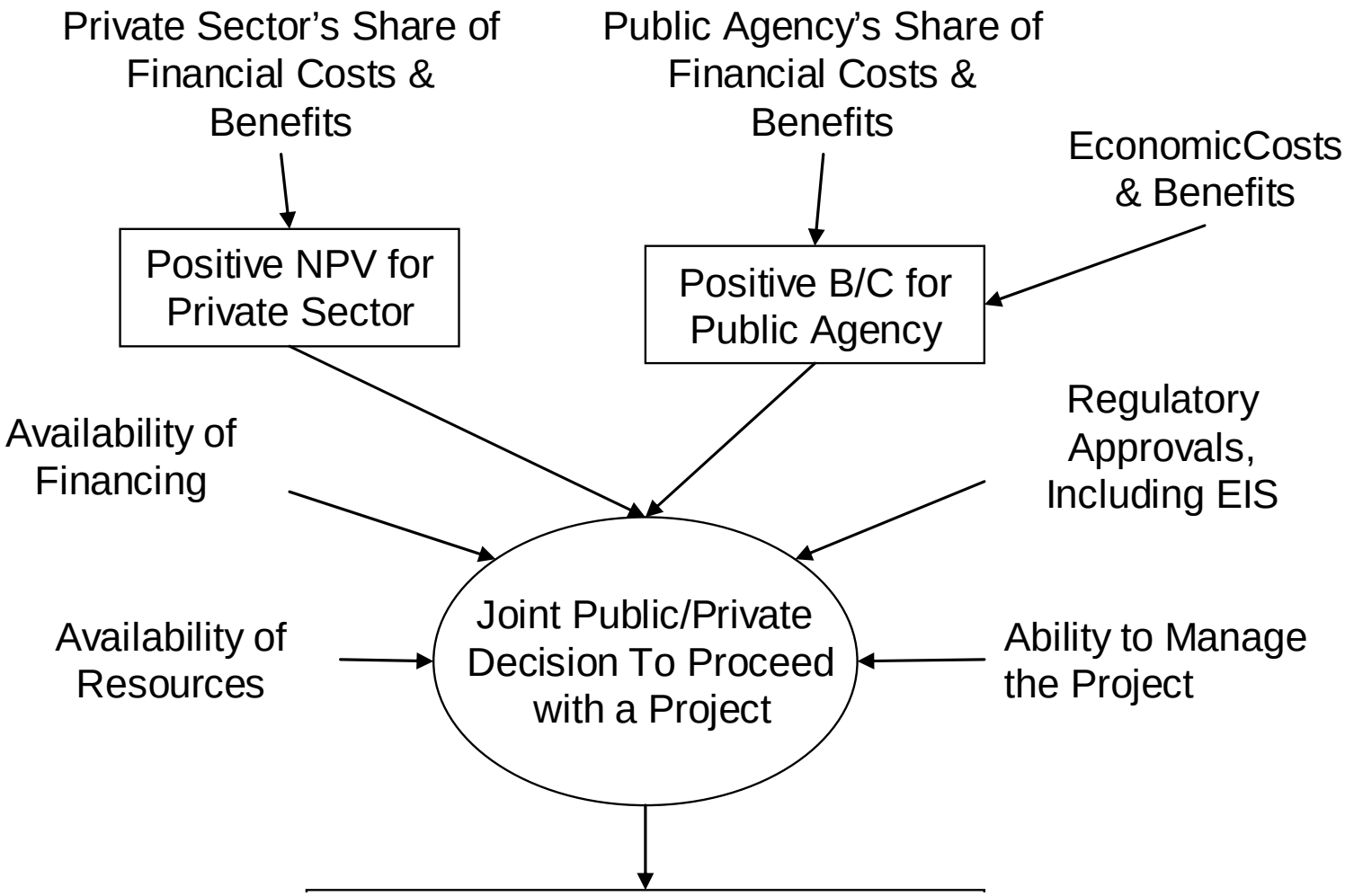
A Successful Project: Private Sector



A Successful Project: Public Sector



Deciding to Undertake a Public-Private Partnership



Success for a Public-Private Partnership

Project Success:

- Completed per design
- On-time, on-budget
- Operates as expected
- Demand as expected
- Financially sustainable for both the public and private sector
- Economic benefits are in fact achieved
- Social and environmental impacts as expected
- Willingness of public to continue support via taxation

Principles of Public-Private Partnerships

- Each side must bear an appropriate portion of the cost, benefits, and risks
- Each project is a separate case
- The partnership should be designed to deal with a particular situation

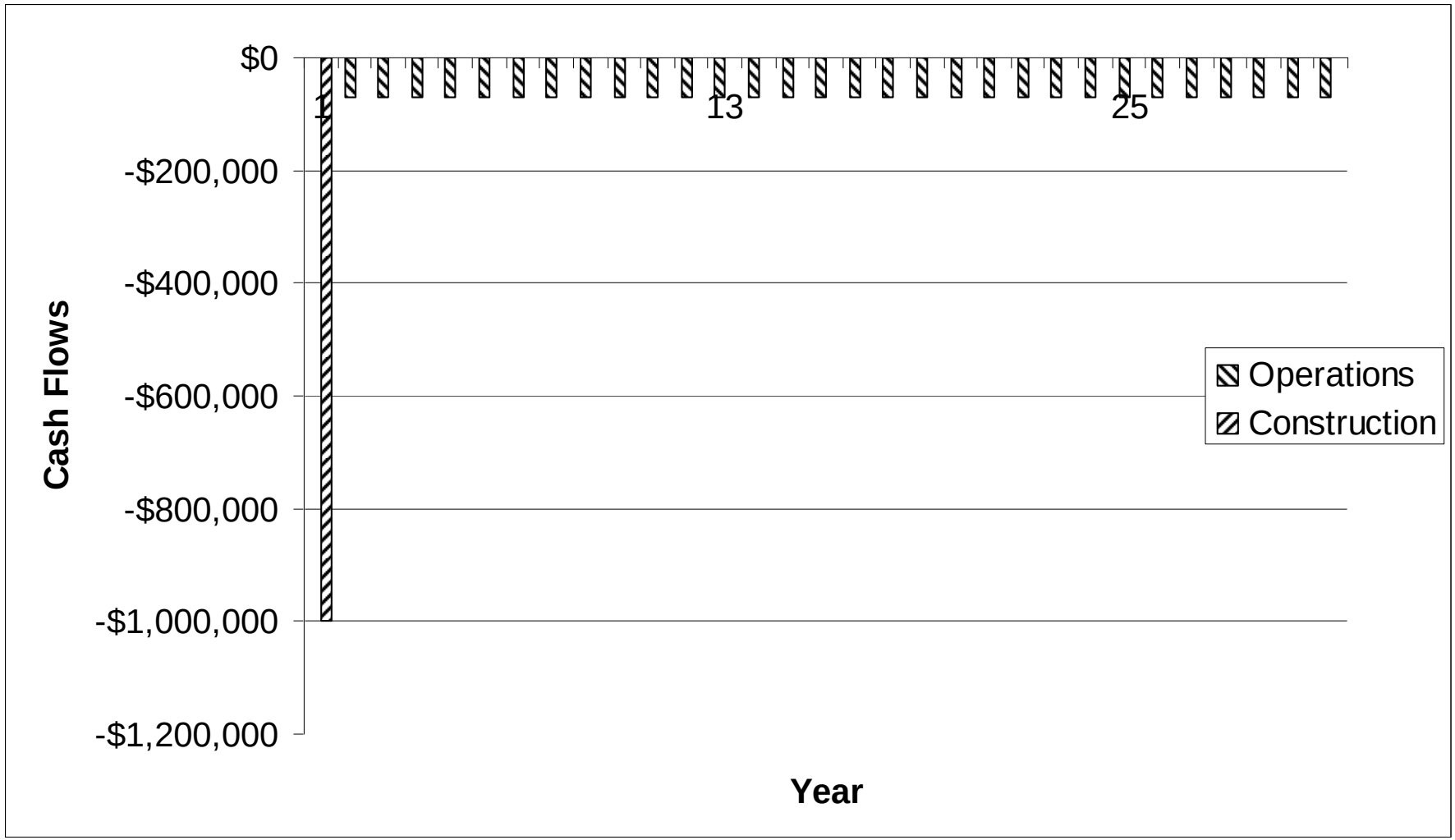
“But Robbie was afraid of public money, and of the bureaucrats who handled it; they always tied strings to it, and every day they would have a tighter hold on the business, telling him what he could do and what not. He preferred private money, because he believed in private business and the sort of people who were satisfied with dividends and had no interest in control.”

Robbie Budd, president of an American aircraft production facility in 1940.
Upton Sinclair, “A World to Win”, the Viking Press, 1946, p. 76

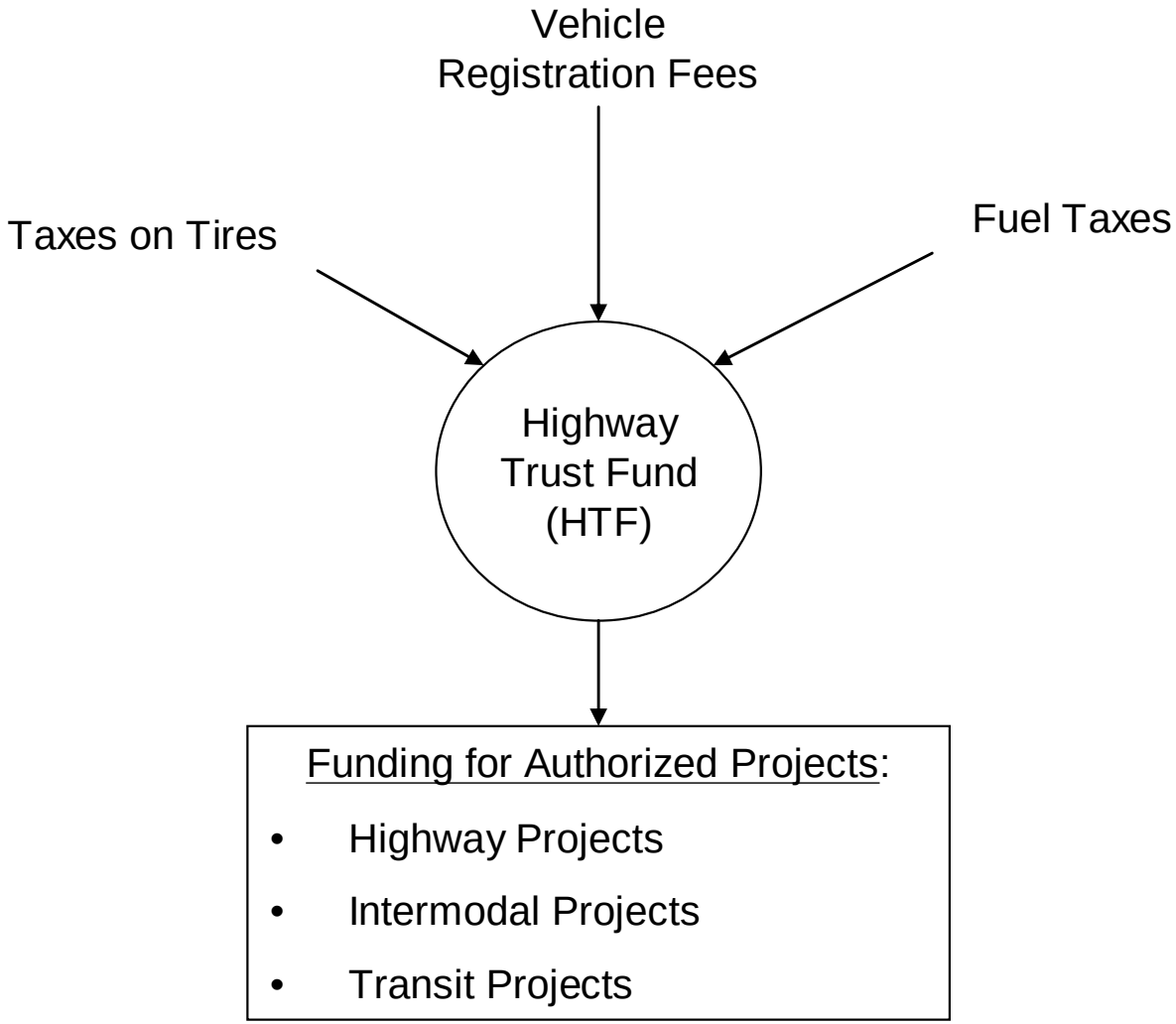
Key Questions

- Who pays how much for what?
- How are risks to be shared?
- Who controls design? Construction? Operations?
- Who owns what portion of the project?
- Will ownership change over the life of the project?

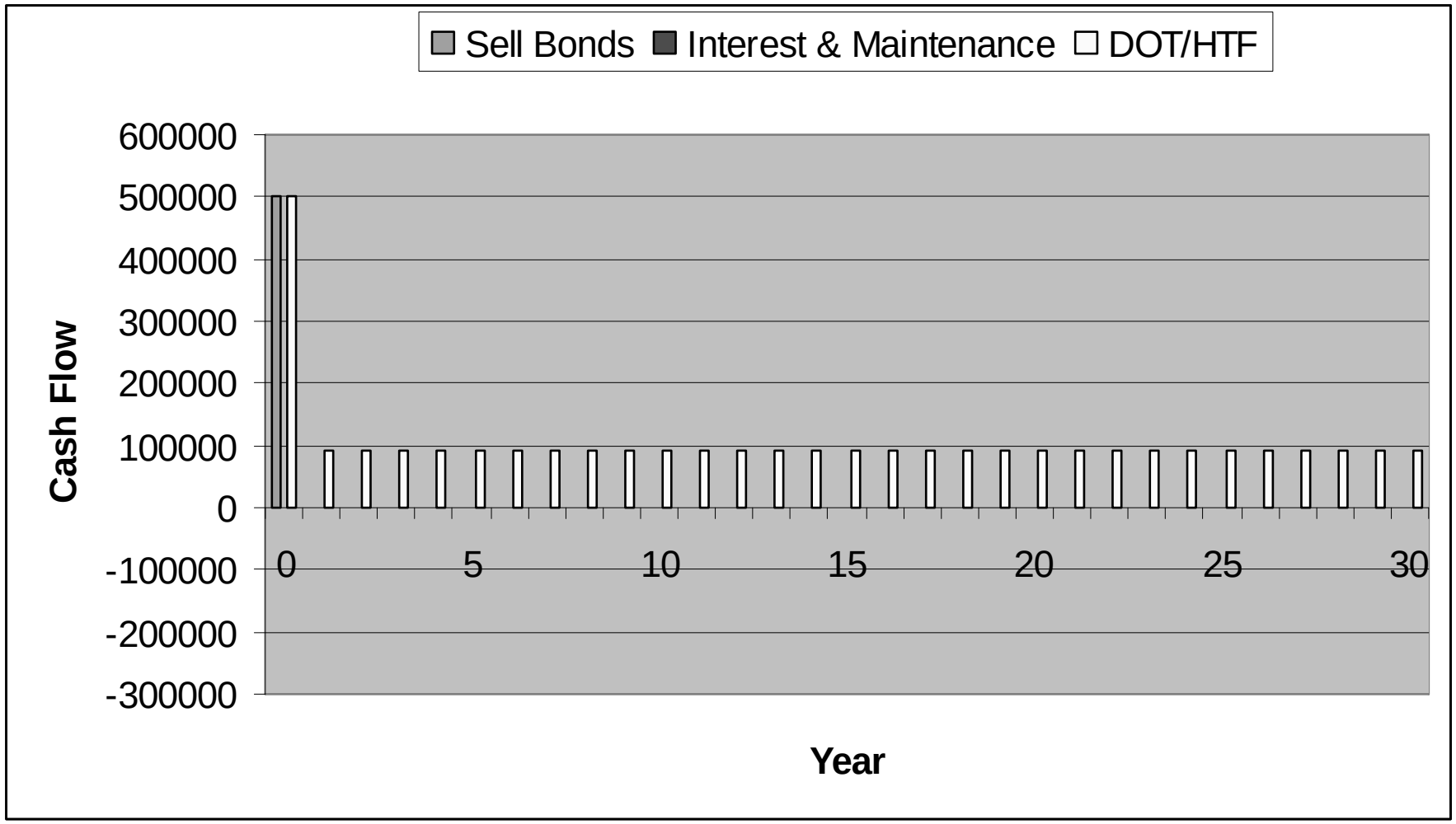
Example: a Bridge Project
1. Costs of Construction and Operation



Example: a Bridge Project
2. Public Funding for Authorized Projects



Example: a Bridge Project
3. 50% from HTF and 50% from Bonds



Example: a Bridge Project
4. A Private Project Using Bonds Backed by Tolls

- Revenue potential:
  - Expected traffic volume
  - What tolls would be reasonable?
  - Will it be possible to increase tolls over time?
- Annual costs:
  - Operating and maintenance costs
  - Interest payments on bonds
    - Construction cost
    - Interest rate

Will toll revenues be sufficient to cover the costs of operations plus the interest on the bonds?

Example: a Bridge Project
5. A Private Project Using Bonds Backed by Tolls

- Revenue potential: $20 million per year
  - Expected traffic volume: 10,000 veh./day
  - Tolls: Up to $5.60 based upon savings in time and distance
  - Annual revenue: $20 million
- Annual costs: $9 million per year
  - Operating and maintenance costs: $5 million per year
  - Interest payments on bonds: $4 million per year
    - Construction cost: $50 million
    - Interest rate: 8%

Will toll revenues be sufficient to cover the costs of operations plus the interest on the bonds? YES!

Example: a Bridge Project
6. Why a PPP Might be Better

- Public participation:
  - Ensure reasonable tolls
  - Reduce interest rate on bonds
  - Bridge could be owned by government agency, or it could revert to public ownership in future

- Private participation:
  - Debt would be held by private sector
  - Private partners could still make reasonable return on their investment
  - Private expertise might reduce costs of construction and operations

Possible Reasons for a PPP

- Complementary strengths
- Public and private benefits
- Expanded public capabilities
- Economic development

Complementary Strengths

	Public Sector	Private Sector
Identifying Societal Needs	Political process can establish priorities	Rapid response to opportunities
Design	Building codes & construction standards	Innovation
Construction	Stable work force	Flexible organizations
Finance	Ability to tax Low interest rates	Private capital Risk assessment Pricing freedom

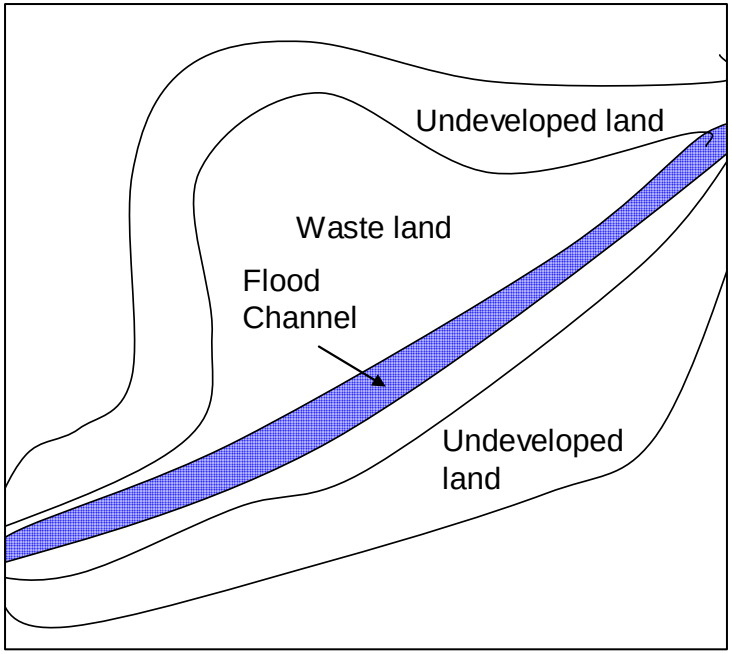
Complementary Strengths (continued)

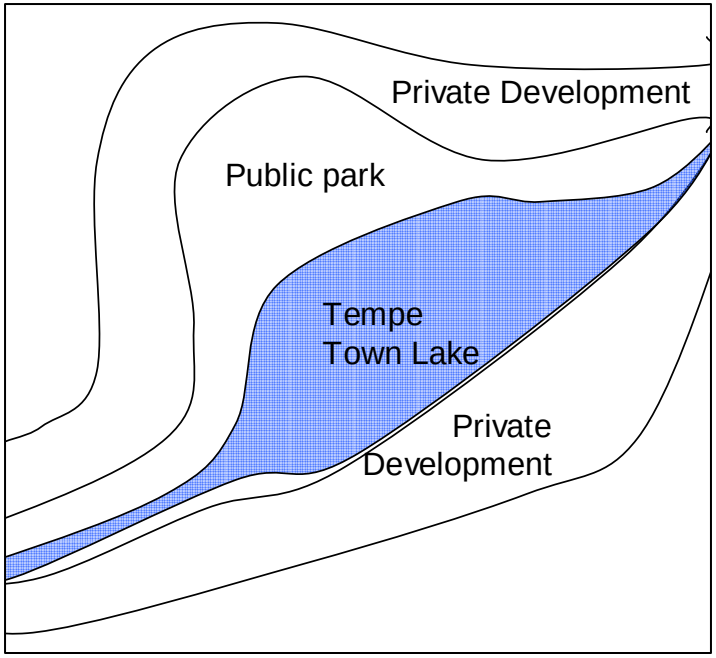
	Public Sector	Private Sector
Politics	More complete evaluation; greater concern with equity	Insulation from politics may allow more objective evaluation
Land Use	Eminent domain Zoning	Greater freedom in using land
Labor	Possibly higher construction costs	Possibly more efficient construction

PPP Based Upon Complementary Strengths

- Rationale:
  - The project could not be undertaken – or could not be done as well – by either sector acting alone.
- Example: Tempe Town Lake (1997-1999)
  - Converting an eyesore into a prime recreational area
  - Project enhances land values
  - Special taxes cover costs of investment & maintenance

Motivation: Turn Waste Land into Park Land and Promote Development





Tempe Town Lake
Community Facilities District (CFD)

- City acquires 840 acres of land
- City creates CFD, which sells bonds to finance construction costs
- Use of land:
  - 5-mile long lake (220 acres)
  - Parks (400 acres)
  - For sale to developers (220 acres)
- Developers agree to pay:
  - OAM: Operations and maintenance assessment (eventually cover operations and maintenance)
  - LAT: Lake assessment tax (cover interest on bonds)

Tempe Town Lake: Financing

- Cost:
  - Land acquisition $11 million (city taxes)
  - Planning $5 million (city taxes & CFD bonds)
  - Construction $45 million (CFD bonds)
  - Operations and maintenance $4 million/year
- Revenue
  - Sale of land to developers
  - LAT: $3 million/year
  - OAM: eventually exceed $4 million/year

PPP Based Upon Mutual Benefits: the Sheffield Flyover, Kansas City

- Motivation:
  - Both public and private sector receive benefits from the project
  - Neither can afford to do the project on their own
  - Both are willing to share the expenses related to the project
- Example: the Sheffield Flyover, Kansas City
  - Avoid conflicts between trains operating on major N-S and E-W routes through Kansas City (private benefit)
  - Avoid delays at rail-highway grade crossings (public benefit)
  - Reduce emissions from both rail and highway traffic (public benefit)

The Sheffield Flyover: Railroad Motivation for PPP

- Private benefits were clear:
  - Reduce train delay by 20 minutes for 150-180 trains/day (valued at $250/train-hour)
  - Annual benefits $5 million
- But financing was a problem:
  - They could not justify the $75 million investment, but were willing to pay a toll
  - Construction of a flyover would increase the railroads' property tax

The Sheffield Flyover: Public Sector Motivation for PPP

- Public benefits were clear:
  - Reduce delay at grade crossing by 530 vehicle-hours per day (annual benefits $1.85 million)
  - Reduced emissions
  - Promote continued use of rail and limiting trucks on highway

- Financing was feasible if railroads cooperated:
  - They could issue bonds at a lower interest rate than was available to the railroads
  - They could cover interest on bonds with revenue from the fees/rail car
  - Property taxes were abated ($1.4 million per year)

Financing the Sheffield Flyover

- Missouri created a “Transportation Corporation”
  - Can receive highway funds
  - Can issue state tax exempt bonds to fund projects
  - Acquires land for projects and holds land until bonds are paid off
  - No property tax while T-Corp owns land
- RRs
  - Paid a fee per car sufficient to cover interest on bonds
  - Avoided property tax

Lessons from the Sheffield Flyover

- Involvement and support of local interest is key
- Willingness to cooperate and to share costs is essential
- Innovative financing can speed a project
- Environmental benefits are part of the story, but financing must be based upon cash flows
- National benefits are part of the story, but may not contribute any cash to the project
- Once formed, a coalition can move quickly to other projects

Maximizing the Ability to Undertake Projects

- Motivation: private capital can be applied to public projects, thereby increasing the number and size of projects that can be undertaken
- Example: Toronto's Highway 407


AON
EllisDon
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Highway 407: Key events

- 1994: construction begins for 69-km, fully automated, open-access 407 Central toll road
  - Total cost C$1.5 billion
  - Province of Ontario financed project by sale of taxable, general obligation bonds
- 1997: road opens, 200,000 trips/day produce annual revenues of C$70 million
- 1999: Ontario decides to privatize road and also to allow private sector to build extensions of the road
- 1999: road leased to international consortium

Highway 407: Elements of the Deal

- 99-year concession
- Lessee to construct and operate 39-km of extensions
- Tolls limited to 10 cents per mile initially, and allowed to increase to 13 cents per mile over 15 years, plus adjustments for inflation (2-3 times higher for trucks)
- No limit on tolls so long as peak-hour traffic is at least 9,000 vehicles per hour
- No limit on ROI for successful bidder

Highway 407: A $4 Billion Deal

- Purchase price: C$3.1 billion
- West and east extensions: C$0.507 billion
- Working capital, fees, capitalized interest: 386 billion
- Consortium required to keep C$775 billion equity in the project (which limits the amount they would be able to borrow and limits the risks of bankruptcy)
- ROI expected to be in excess of 11%

Public Investment to Stimulate the Economy

- Motivation: business opportunities exist that would create jobs and local economic growth, but the expected ROI is insufficient to attract private investment.
- Example: Province of Newfoundland and Labrador's investment in offshore oil facilities

Hibernia Oil Field

- Province becomes an equity partner in funding an off-shore drilling platform (Canada Hibernia Holding Company)
- Economic benefits: jobs and higher income for residents
- Financial benefits: profits from sale of oil, which would be shared by Province and oil companies
- Risks:
  - Survival of platform in “Iceberg Alley”
  - Low oil prices be high enough

Hibernia Oil Platform: Summary

- Total cost $5.8 billion for construction plus $2.1 billion for continued exploration
- Annual operating costs estimated as $325 million
- NPV over 20 year life with 12% discount rate
  - $5.8 billion
  - Assuming $20/barrel
- Public agency created to own 8.5% share in project
- Economic benefits:
  - 5000 construction jobs
  - 3.1% increase in regional economic activity in first year of operation

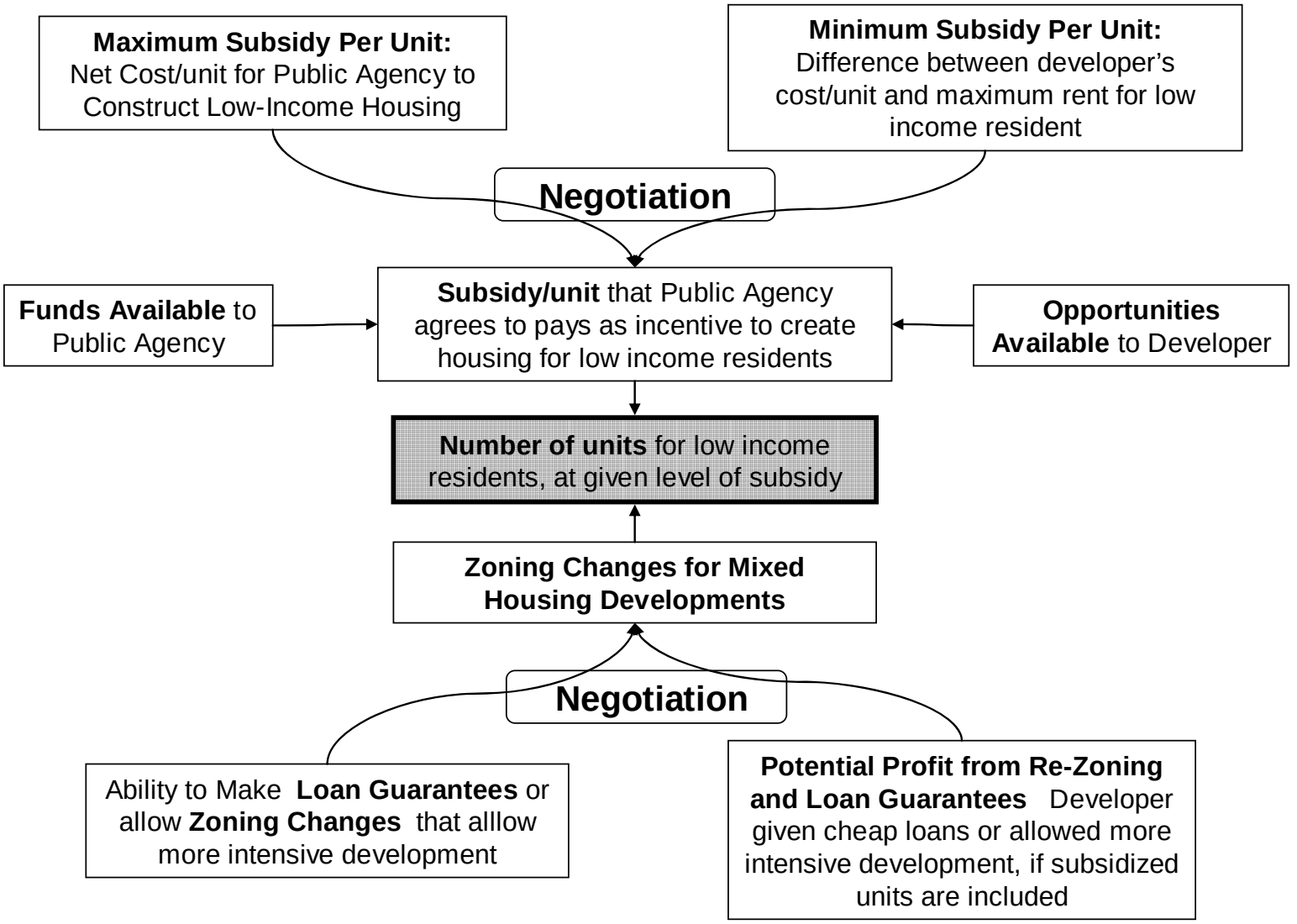
Situations Well-Suited to PPPs

1. Project requires complementary strengths of public and private sector (Tempe Town Lake)
2. Project provide public and private benefits, but only the total benefits are sufficient to justify the project (Kansas City Flyover)
3. Public wishes to maximize ability to undertake projects (Toronto 407)
4. Public decides to assist new industries (Hibernia Oil)

Battery Park City

- Example of PPP to create “new town in town”
- Motivation:
  - Containerization of ocean shipping
  - Need for housing in New York City
  - Desire to have housing close to employment
- Vision:
  - Fill in ~ 100 acres of waterfront (public)
  - Develop master plan (local & state approval)
  - Lease land to developers
  - Use tax and zoning incentives to encourage housing for low- and moderate-income residents
  - Create infrastructure - pedestrian walkways, recreational areas, roads, schools, sewers, etc. (public)
  - Construct residential, retail, office space (private sector)

Public Policy to Promote Housing for Low- and Moderate-Income Residents

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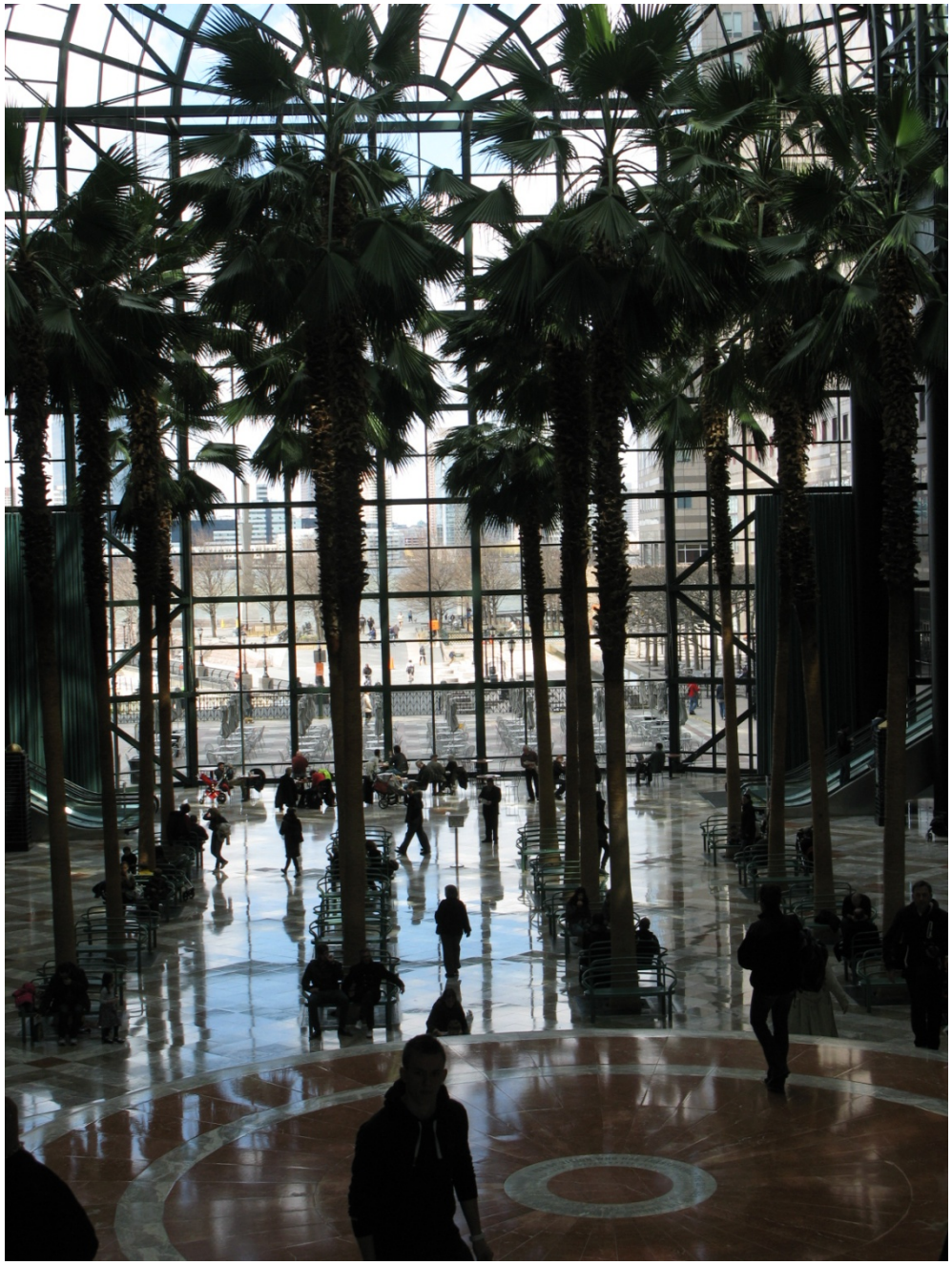

1.011 Project Evaluation

Spring 2011