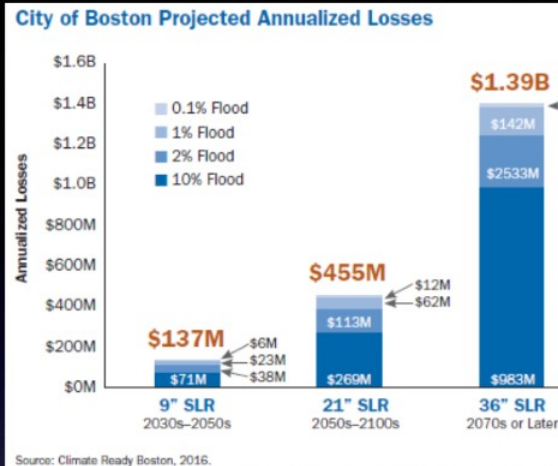


Return on Investment

Boston-wide:

- PV of inaction till 2100: \$10.3 billion @ 3%
\$2.7 billion @ 6%

- New **green buildings** – ↑ costs 0.5-3%, ↑ rent premium 6-20%, lower insurance and energy costs
- Business case less clear for retrofits, district-level investments
- Investing \$1 saves \$4 or \$6 ??
- Refine the business case



Estimated Costs and Benefits of Near-Term Actions in East Boston

ESTIMATED COST	\$48-80 million
NET PROJECT BENEFIT	\$29-69 million
BENEFIT-COST RATIO	1.4 - 2.7

District-Level Protection: Who Pays, Who Benefits?

- Public costs, private benefits – value capture?
- Direct vs. indirect benefits + ability to pay
- Co-Benefits? Or deadweight cost?





Resilience for Privately-Owned Buildings

Investment:

- Elevation
- Align with district plan
- Floodable 1st floor
- Critical equipment ↑
- Energy, air quality
- Backup power, telecoms

- Organizational continuity:
- Remote work plan
- Redundancy
- Distributed operations



Return:

- Rent premium 6-20%
- Reputational value
- Insurance costs
- Energy costs
- Interruption losses ↓

But:

- Developer ST horizon
- Owner-Lessee divide
- Free-ride on district plan
- Retrofits expensive
- Returns uncertain

Incentivizing Building Retrofits



- Building Resilience Metrics - to price risk, monetize investments
- Risk-based insurance, mortgages - work with insurance co's, banks, FEMA
- Mass Save style program – free audits, subsidized upgrades + loans. Integrated providers to aggregate incentives, insurance savings
- Integrate resiliency + energy efficiency – lower costs, X-subsidize, access energy-related finance
- Commercial buildings? Low-income housing?