Business Case Analysis for City of Miami Beach Stormwater Resiliency

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Key Questions We Addressed:

- What are the effectiveness and economic benefits of the city’s planned infrastructure improvements and private sector investments at reducing flood risk?
- Overall, what is the business case for stormwater resilience investments?

Business case components:

- Expected losses/property damage
- Property values
- Insurance premiums
- Property tax revenues
- Tourism revenues
- Operational/response costs
- Traffic disruptions
- Business closures
Project Process

Data Collection

Catastrophic Risk Model
(AIR – Task 2)

Integrated Flood Model
(Kimley-Horn – Task 3)

Hedonic/Property Value Model
(ICF – Task 4)

Communication

Individual Property Business Case
(Brizaga - Task 5)

Neighborhood-level Business Case
(ICF – Task 6)

City-wide Business Case
(ICF – Task 7)

Communicate the Business Case
Illustrative Stormwater Modeling Results

- Utilized ICPR4 model
Property Value Model

Developed hedonic pricing model to estimate effects of flood risk and infrastructure investments on residential property values.

ICF’s analysis concluded...

4.9 to 14.1% increase in residential property value per foot of nearby road elevation

8.5 to 11.5% increase in residential property value per foot of parcel elevation
Insurance Impacts

• AIR modeling shows that with 1’ of SLR from 2013, the average annual losses from flooding will increase 96%.
• Without adaptation this could mean a near doubling in flood insurance costs.
• In First Street neighborhood, public and private investments would decrease AAL by 7% and 17%, respectively.
City-wide Business Case Summarized

- Investments of at least $1 billion over the next 30 years would be cost-beneficial to prevent surge-related flood damages.

- In addition, raising roads to 3.7’ NAVD across the city could conservatively increase property values citywide by over $1 billion in assessed value.
  - This is a $6.6 million annual increase in tax revenue to the city.

- Therefore, city-wide public and private investments of at least $2 billion would be cost-beneficial.