

HDR



Leveling the Playing Field: **Taking Social Equity into Account in Adaptation** **Alternatives**



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01 Calls for Equity Inclusion

02 Incorporating Equity in
Adaptation Alternatives

03 SFWMD Example

04 Innovative Approach

Calls for Equity Inclusion



Executive Order 12898

- *Established Interagency Working Group on Environmental Justice*

Circular A-4

- *Allows Distributional Effects Analysis*

Executive Order 13653

- *Evaluates Social Equity in Infrastructure*

Calls for Equity Inclusion

(Current Administration)



Executive Order 13985

- *Required Equity Assessments for Federal Agencies*

Executive Order 14008

- *Introduced Justice40 Initiative*

“40% of overall benefits” of federal investments flow to disadvantaged communities

Executive Order 14091

- *Created Flexibility in Federal Funding for Underserved Communities*



Incorporating Equity in Adaptation Alternatives

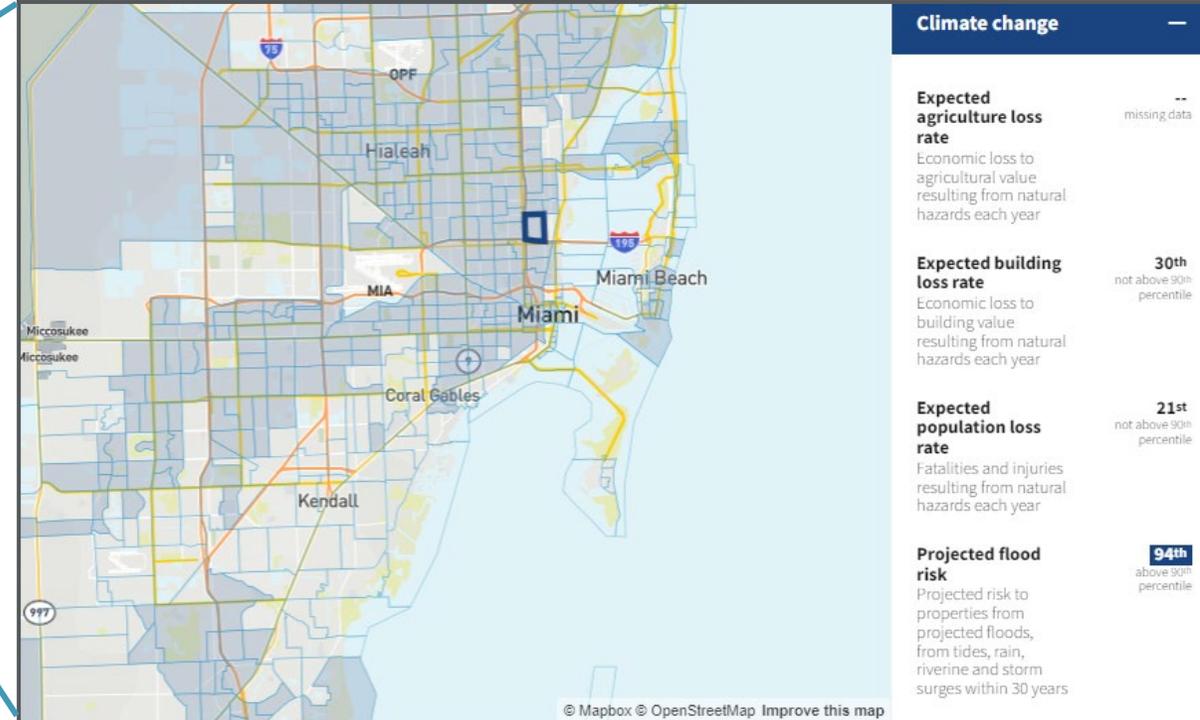
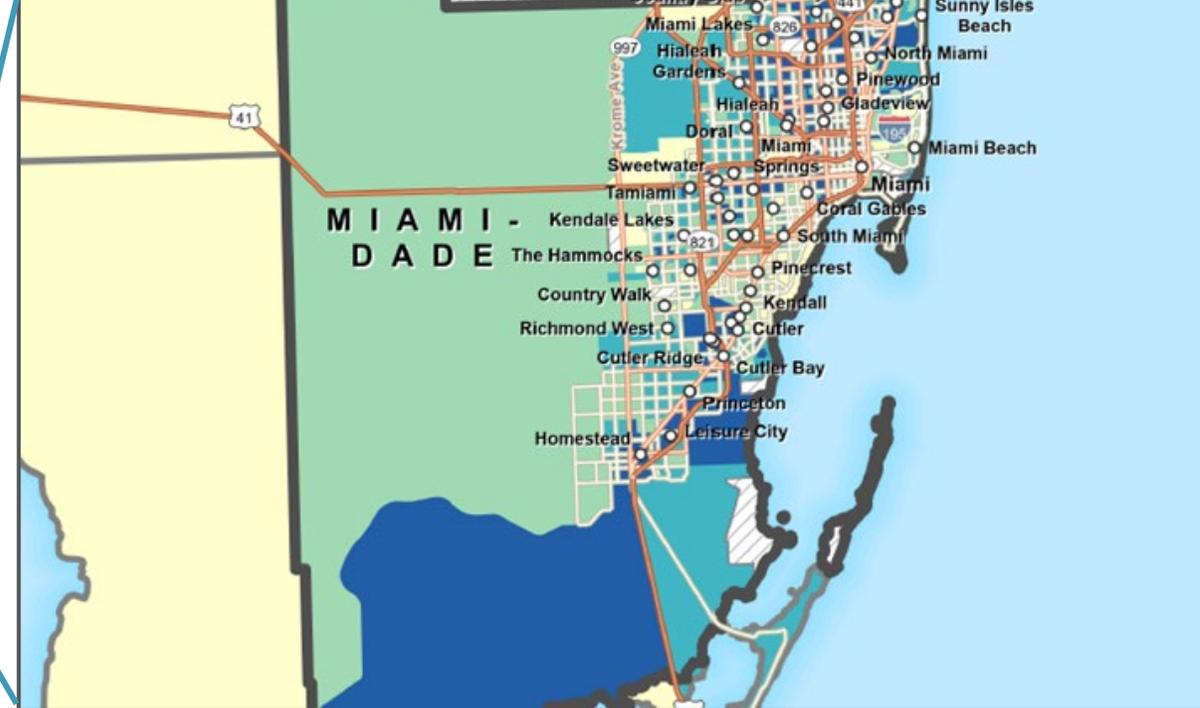
FEMA Alternative Cost-Effectiveness Methodology

- October 2022 Memo
- Applicable for FY22
- Building Resilient Infrastructure and Communities (BRIC) grants
- Flood Mitigation Assistance (FMA) grants
- Reduced discount rate for Benefit Cost Analysis (BCA) for disadvantaged communities

Incorporating Equity in Adaptation Alternatives

Data Sources Available

- CDC/ATSDR Social Vulnerability Index (SVI)
- FEMA National Risk Index (NRI)
- EPA Environmental Justice (EJScreen) Tool
- CEQ Climate and Economic Justice Screening Tool
- UCF & UofSC SoVI®



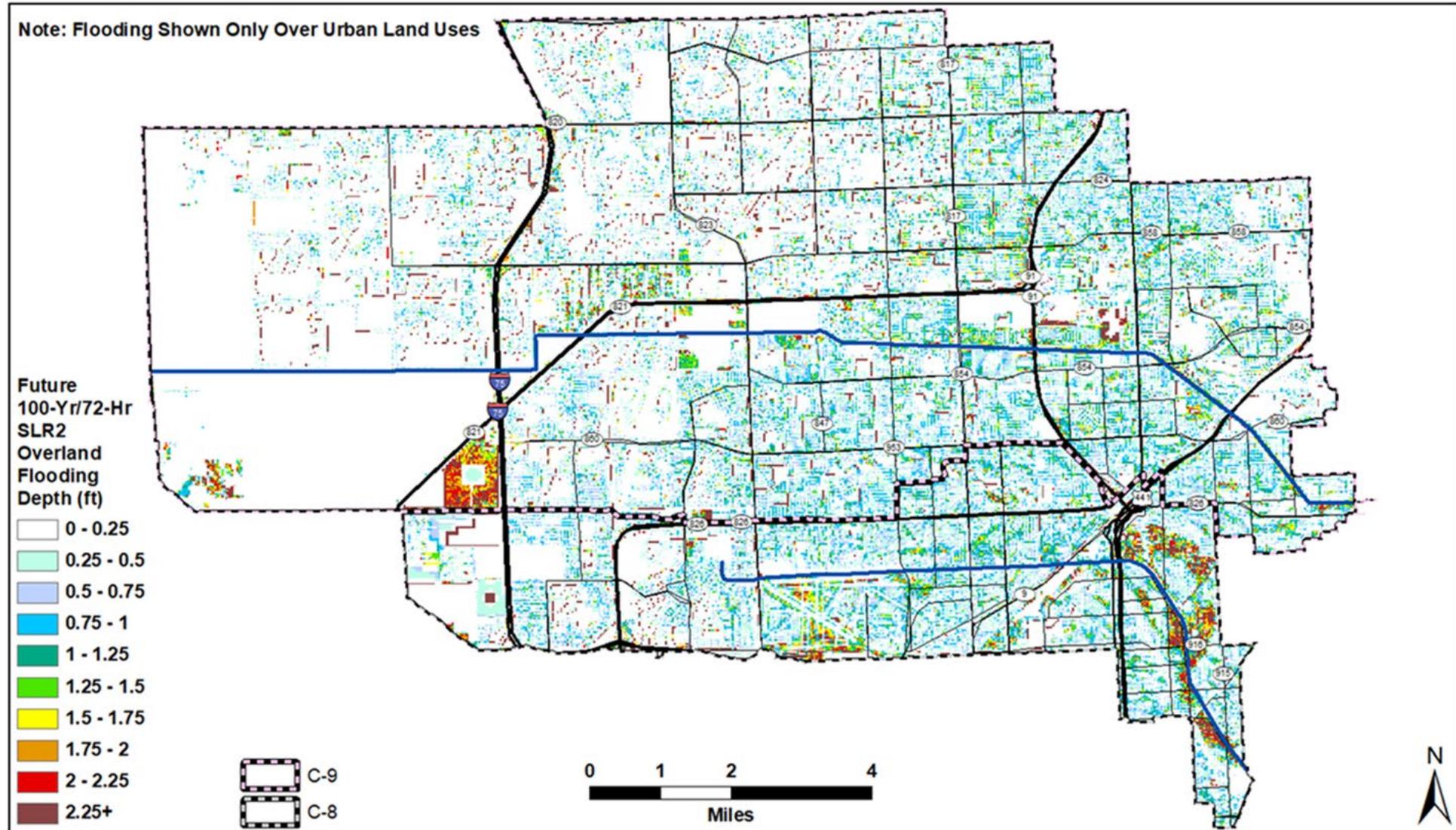
Incorporating Equity in Adaptation Alternatives

How to Use the Data

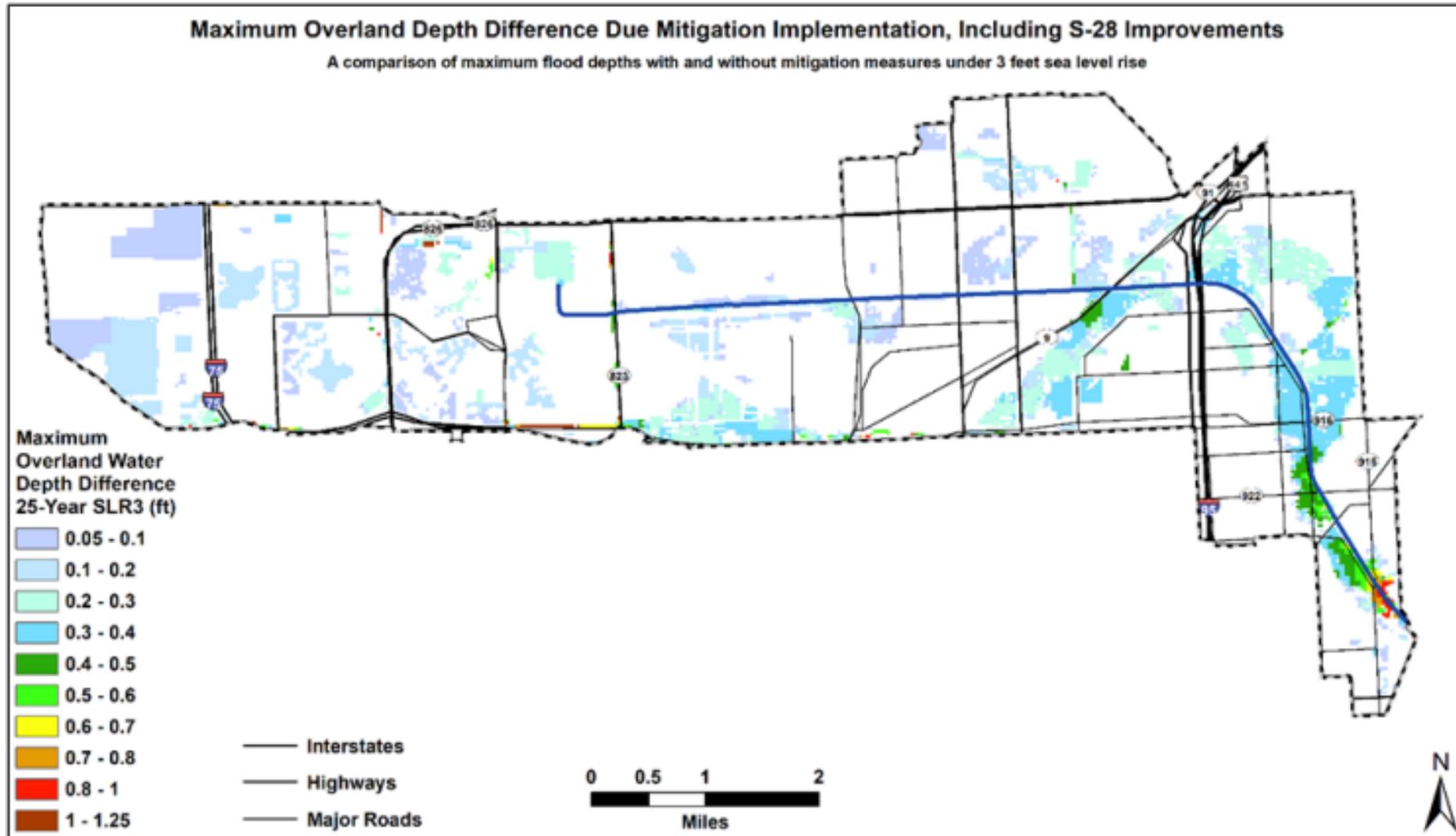
- Publicly accessible and straightforward
- Helps decision makers prioritize adaptation projects for funding
- Indices can be used as weightings for selected evaluation criteria
- Most data can be downloaded to GIS and overlaid with predicted flood inundation



C-8 and C-9 Basins Flood Protection Level of Service



C-8 Basin – with and without Adaptation Alternatives



C-8 Basin – Adaptation Alternatives

FLOOD MITIGATION AND ADAPTATION PROJECTS



Overview

Simulated Flood Depth (FPLOS Phase 1 Assessment)

Local Projects at C-8 Basin

Local Projects at C-9 Basin

Project Feedback

DOUBLE CLICK ON A POINT ON THE MAP FOR ADDITIONAL PROJECT INFORMATION

Project:
S-28 Pump Station and Gate Renovation

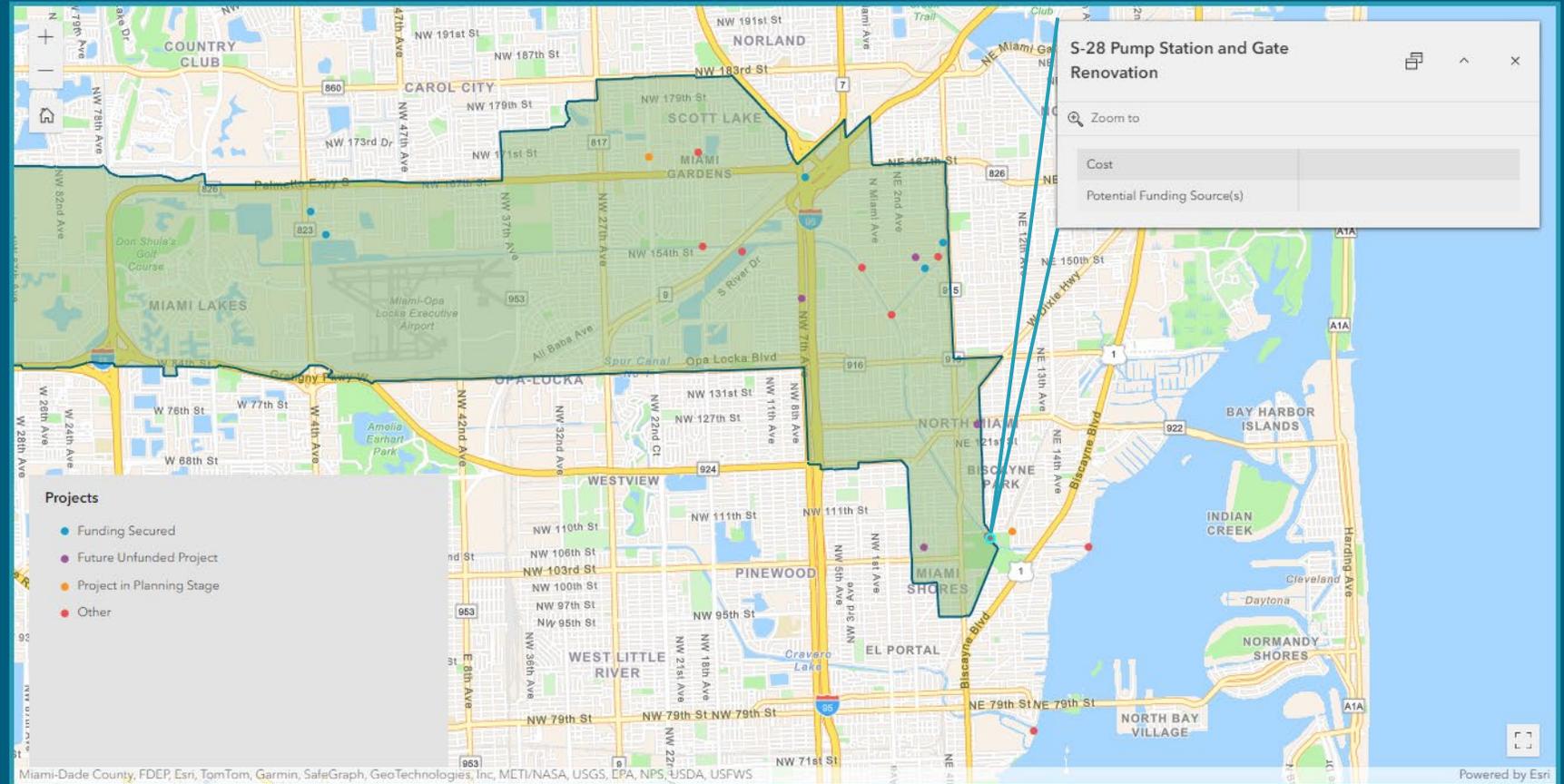
Responsible Agency:
South Florida Water Management District

Project Type:
Infrastructure (Water/Sewer/Drainage)

- Potential mitigation project for investigation (from Phase I study)

Estimated Completion Date:
Unknown

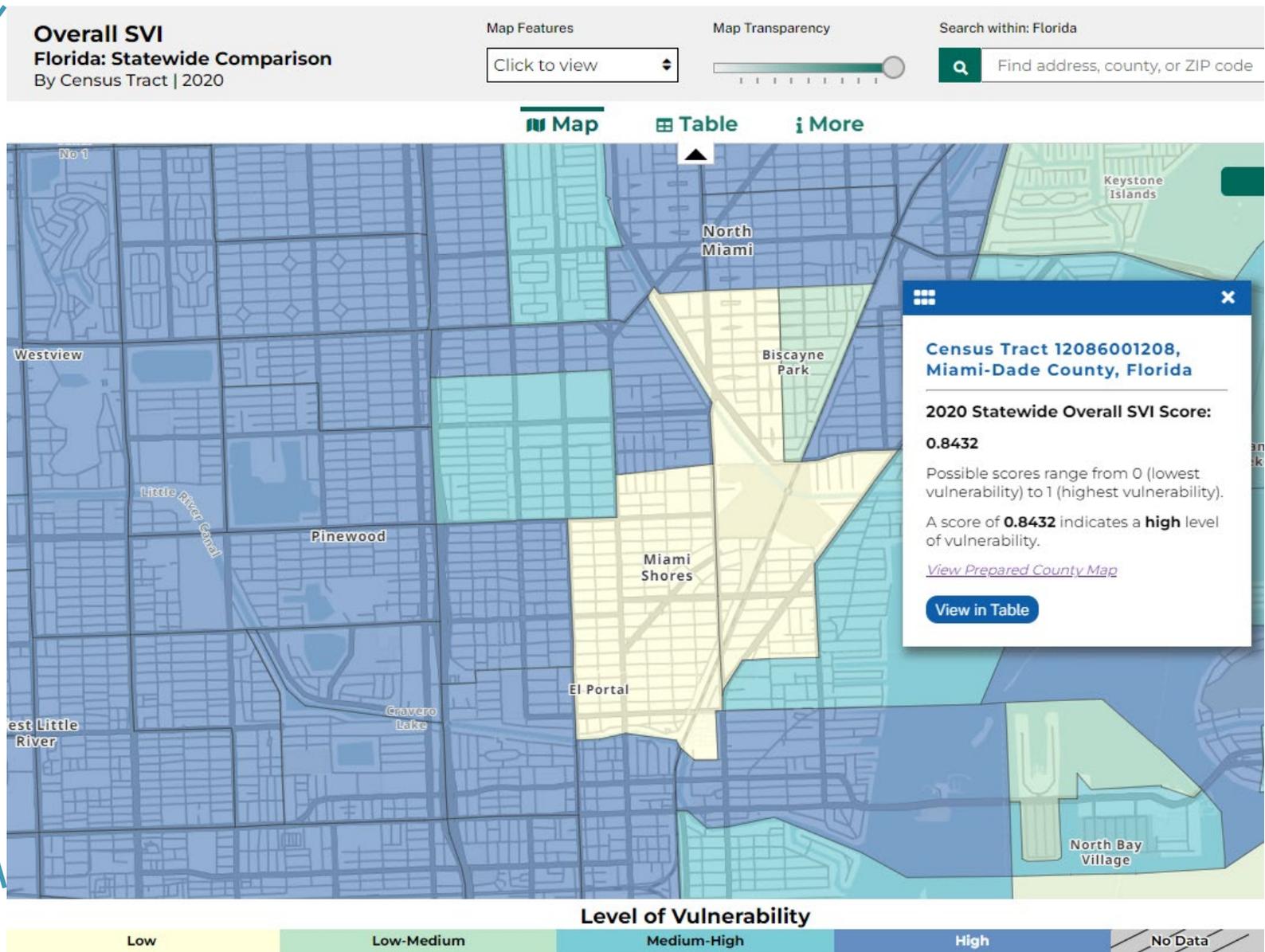
If you have additional flood projects information, to add or update, please click at the "Projects Feedback" link to share with the project team.



C-8 Basin – Adaptation Alternatives and Equity

Data Sources Available

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C-8 Basin – Adaptation Alternatives and Equity

Data Sources Available

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Identified as disadvantaged?

YES

This tract is considered disadvantaged because it meets more than 1 burden threshold AND the associated socioeconomic threshold.

[Send feedback](#)

Climate change

Energy

Health

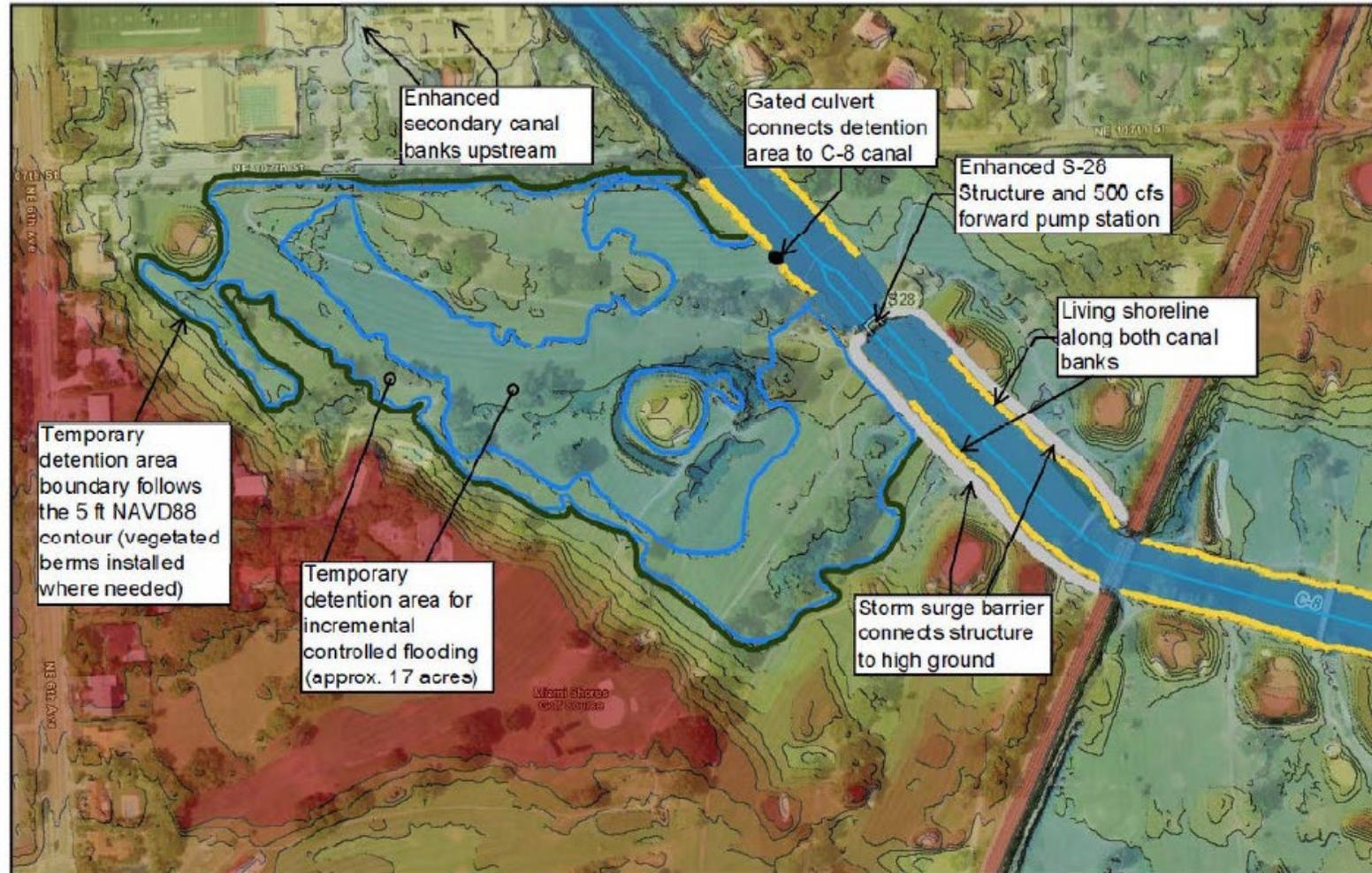
Housing

Legacy pollution

Transportation

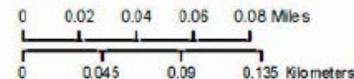
Water and wastewater

C-8 Basin – Adaptation Alternatives



South Florida Water Management District
 3301 Sun Club Road, West Palm Beach, Florida 33406
 561-496-4800, www.sfwmd.gov

C-8 Basin Conceptual Plan



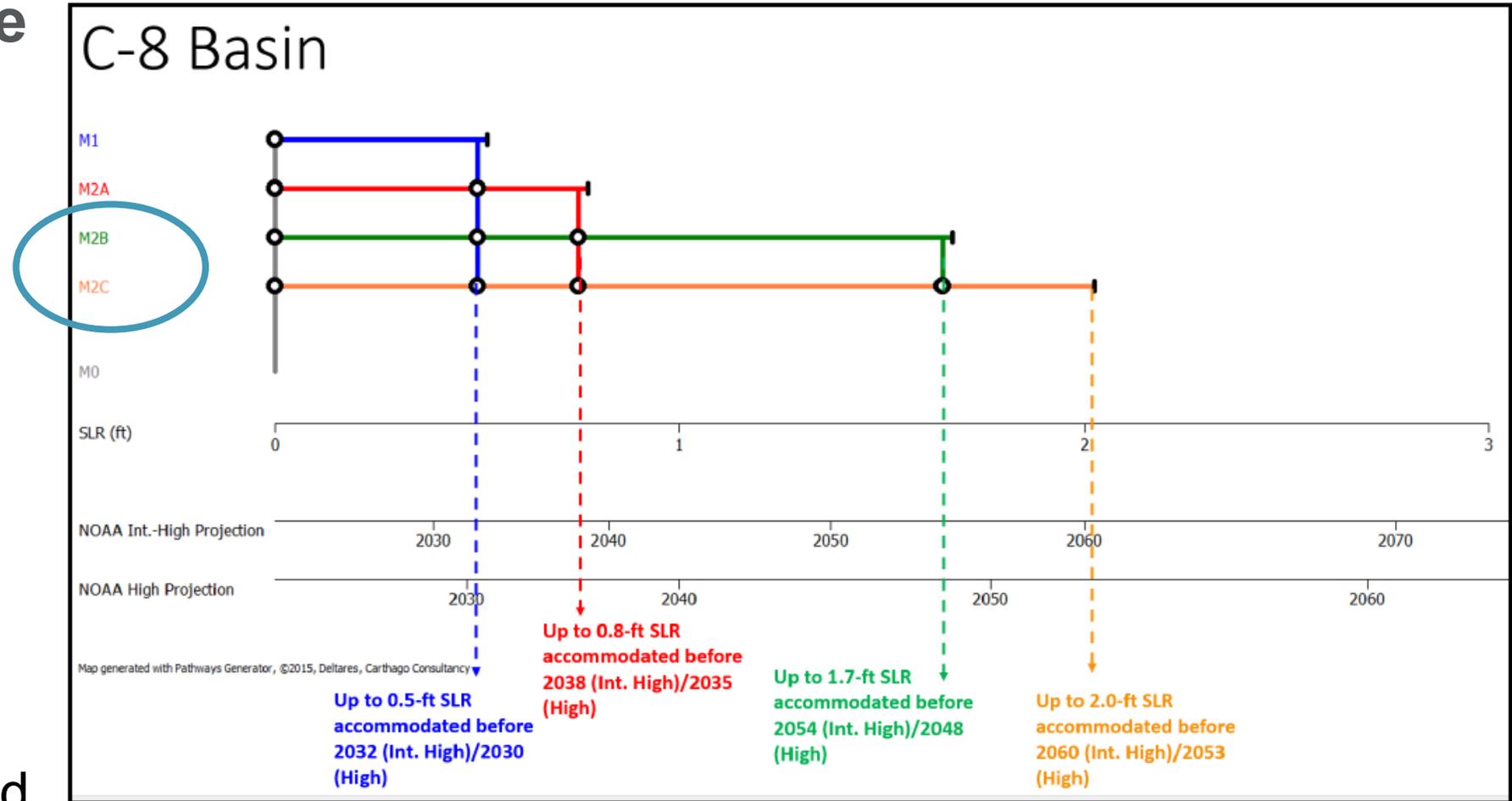
DISCLAIMER:
 This map is a conceptual or planning tool only. The South Florida Water Management District does not guarantee or make any representation regarding the information contained herein. It is not self-executing or binding, and does not constitute an offer of insurance or any other financial product. Any present or future right or use of real property and its value from public records disclosure is not contained in under Section 115.07(3)(b)(1), Florida Statute.

Dynamic Adaptation Planning Pathways (DAPP)

Deltares software

Analysis included:

- SE FL Regional Climate Compact SLR Projections
- Estimated Annual Damages
 - Delft-FIAT tool
 - HAZUS data
- Four mitigation scenarios compared



Context for this Innovative Approach

Equity and Distribution

- Income inequality => dramatic rise since 1980
- Infrastructure => inherent distributional outcomes
- Agencies => seek sound, defensible methods

Standard Benefit-Cost Analysis

- **Applied on major projects** for decades
- Now, increasingly **required in Federal grants**
- Analytical focus: “**market**” **value** of improvements
- **Ignores differences** in people, such as income
- *BCA provides **no input** on equity evaluation*
- *Distributional analyses => **alongside BCA***

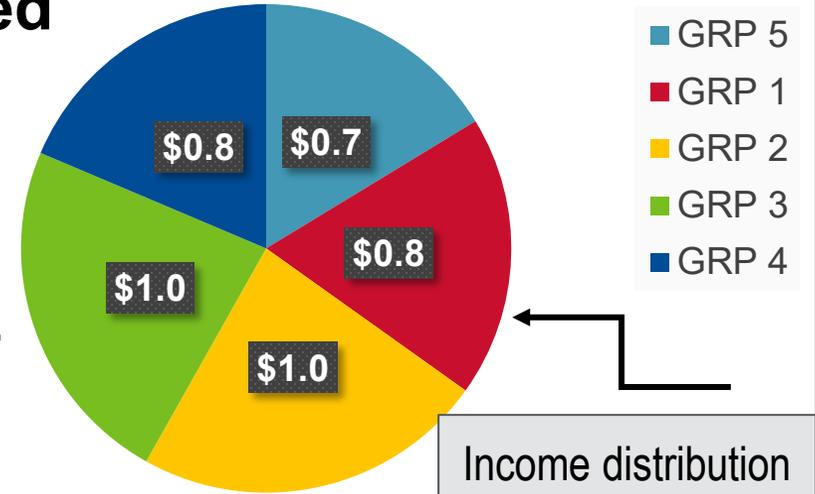


Innovative Approach *Illustration*

Standard BCA

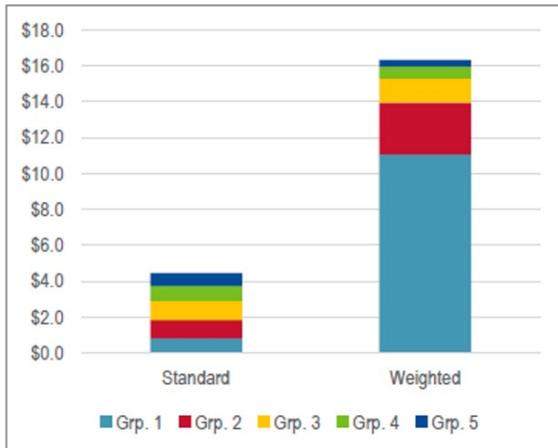
Benefit Category	Present Value (\$M)
Residential Structures	\$\$\$
Residential Contents & Displacements	\$\$\$
Commercial Structures	\$\$\$
Commercial Contents & Displacements	\$\$\$

Distributed Benefits

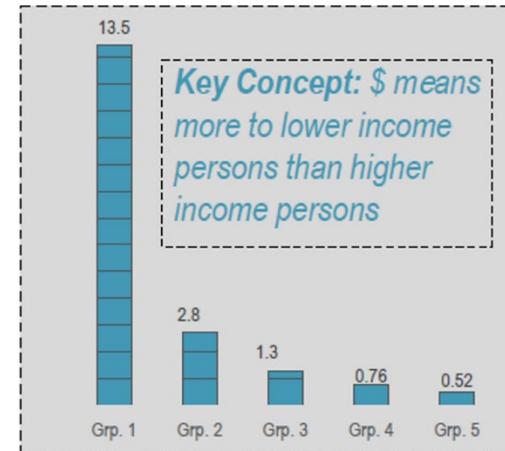


Income distribution of beneficiaries

Weighted BCA



Income-Based Weights



Income distribution of region



***A rising tide raises all boats,
but you need a boat to rise with the tide.
What does he who does not have a boat do?***



RAHUL GANDHI

HDR