Beyond the Vulnerability Assessment: Moving from Sea Level Rise Adaptation Planning to Implementation in the San Francisco Bay Area

**Problem: Sea Level Rise**

State Guidance → Vulnerability Assessment → Adaptation Planning → Implementation → Resilience → Monitoring and Evaluation

**Example Tool #1: Overlay Zones/Districts**

**Tool Type:** Regulatory

**Strategy:** Zoning

"Overlay zones superimpose additional regulations on an existing zone based upon special characteristics of that zone," (Grannis 2011).

- **Overlay Zones**
  - Protect zone
  - Accommodate zone
  - Retreat zone
  - Preserve zone

**Purpose:** Protect/Accommodate/Retreat/Preserve

**Current Development Stage:** Pre-Development/Existing Development/Redevelopment

**Example(s):** East Hampton, NY; Model SLR Overlay Zone for MD; Tillamook Co, OR

**Example Tool #2: Rebuilding/Redevelopment Restrictions**

**Tool Type:** Regulatory

**Strategy:** Rebuilding/Redevelopment Restrictions

"Limit a property owner’s ability to rebuild structures destroyed by natural hazards…" (Grannis 2011).

- **Purpose:** Accommodate/Retreat/Preserve

- **Current Development Stage:** Redevelopment

- **Example(s):** Maine’s Sand Dune Rules, South Carolina’s Beach Front Management Act

**Example Tool #3: Transferable Development Credits (or Rights) Programs**

**Tool Type:** Market-Based

**Strategy:** Tax and Other Development Incentives

"Restrict development in one area and allow for the transfer of development rights to another area more appropriate for intense use." Includes the creation of a development rights bank and identification of “sending and receiving” areas, (Grannis 2011). These programs are also a zoning tool and can be paired with overlay zones to identify sending and receiving areas. To ensure that sending areas are preserved, sending landowners should execute a permanent conservation easement, (Herzog and Hecht 2013).

**Purpose:** Accommodate/Preserve

**Current Development Stage:** Pre-Development/Redevelopment

**Example(s):** Hillsborough Co, FL; Collier Co, FL; Malibu, CA; Ocean City, MD

**Common Barriers**

- Lack of public areas
- Weak funding
- Time
- Other

**Guiding Principles**

- **Use: Public**
- **Use: Science**
- **Use: Mainstream**
- **Capacity:** Community
- **Standards:** Participation
- **Strategies:** Participation
- **Process:** Access
- **Engagement:** Technical

**By the Numbers**

**GENERAL**

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This guidance is intended to help local governments unsure of how to take the next step in choosing and implementing sea level rise adaptation strategies. It includes a categorization and analysis of planning, regulatory, market-based, and engineering tools that jurisdictions can use as a first step to catalyze action on adaptation strategy implementation. Additionally, this report provides a discussion of undertaking legal, coordination, and equity considerations when adapting to sea level rise.