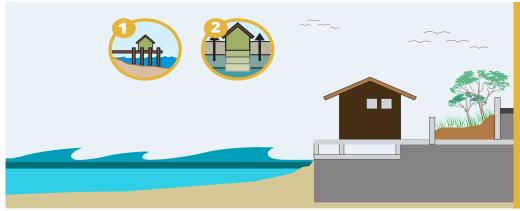
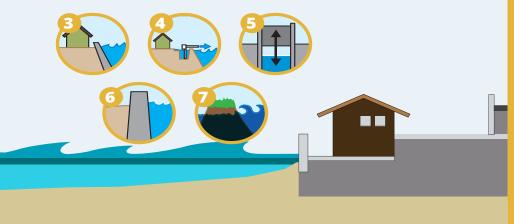
ADAPTATION MEASURES

Adaptation Measures are engineering and planning solutions designed to manage, mitigate, and avoid impacts from sea level rise and flooding. Depending on the location, single or hybrid adaptation measures can effectively address flooding.



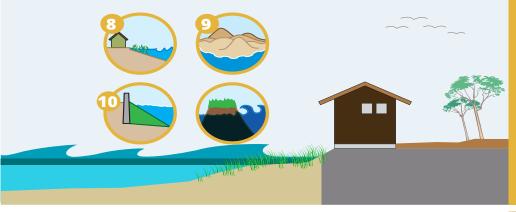
Accommodate

- **1.** Floating structures or floodable developments are designed to accommodate flooding.
- **2.** Elevating buildings, roads, utilities, and grades provides near to medium-term flood protection.



Protect: Engineered

- **3.** Seawalls, revetments, and bulkheads are vertical features that protect from wave action and erosion.
- **4.** Pump stations move water to nearby retention basins or to outer water ways.
- **5.** Tide gates span waterways to provide protection from high tides or storm surge.
- **6.** Levees are vertical earthen structures that protect shorelines from flooding and wave action.
- **7.** Breakwaters and artificial reefs are structures engineered for erosion control and wave energy reduction.



Protect: Natural

- **8.** Bio-beds or near-shore habitat enhancements reduce small wave action and erosion.
- **9.** Bay and beach nourishment protect inland structures and reduce erosion from flooding and wave action.
- **10.** "Horizontal levees" combine marsh and transition zone habitat backed by a levee for dual protection benefits.



Retreat

11. Managed retreat accommodates flooding and shoreline migration by moving development out of harms way.