Sea-Level Rise and the California Economy

December 3, 2019
A Bold New Vision
5 Big Moves

- COMPLETE CORRIDORS
  - Backbone of the system

- TRANSIT LEAP
  - Alternatives to automobiles

- MOBILITY HUBS
  - Transfer points

- FLEXIBLE FLEET
  - Transfer points

- NEXT OS
  - Enabling technology

- 5 Big Moves

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Where people live and work
Foundation for a Bold New Vision
Resilience for Existing and Future Conditions
Resilience for Existing and Future Conditions
South SD County – 2.5 ft SLR
South SD County – 6.6 ft SLR
Possible Adaptation Strategies

While the strategies included in this figure mainly summarize physical changes to infrastructure, it is important to note that policy changes, operational changes, and educational efforts may also support adaptation in these areas.

**Ocean Beach Bike Path**
- Potential adaptation strategies for these assets are adapted from State guidance and include the following:
  - Levees or raised revetment
  - Elevate on boardwalk
  - Relocate bike path inland

**North Harbor Drive Bike Path**
- The Embarcadero Bike Path and North Harbor Drive Bike Path will be among the first land-based assets flooded in downtown City of San Diego and will likely be part of city-wide adaptation planning. Potential adaptation strategies for these assets are adapted from State guidance and include the following:
  - Raised seawall/bulkhead to keep water out
  - Bike path elevated with fill, essentially creating a levee
  - Relocate bike path away from waterfront

**Coastal Rail Trail at Downtown**
- The vulnerability for this trail stems from the low point under I-5. Due to the infeasibility of raising I-5 in order to raise the trail, the Sweetwater Loop Trail could be maintained as a floodable asset.
- Adaptation strategies for this asset are adapted from State guidance and include the following:
  - Separate trail from river with flood-proof wall
  - Elevate above I-5
  - Relocate inland

**Embarcadero Bike Path**
- Blue Line, Orange Line, and Green Line Trolley flooding is anticipated to occur simultaneously with or after flooding of other critical infrastructure. The Railroad and Coastal Rail Trail will also be impacted in downtown San Diego.

**Sweetwater Loop & River Trail**
- The vulnerability for this trail stems from the low point under I-5. Due to the infeasibility of raising I-5 in order to raise the trail, the Sweetwater Loop Trail could be maintained as a floodable asset.
- Adaptation strategies for this asset are adapted from State guidance and include the following:
  - Separate trail from river with flood-proof wall
  - Elevate above I-5
  - Relocate inland

**SR-75**
- Potential strategies for Imperial Beach:
  - Elevate SR-75
  - Armoring Imperial Beach coastline
  - Phased relocation/retreat
  - Sand nourishment
  - Hybrid dune and cobble
  - Five groins with sand nourishment

**Bayshore Bikeway**
- Potential strategies for Coronado adapted from State guidance:
  - Seawall, revetment, vegetated sand dune, beach nourishment
  - Stormwater management best management practices, elevate trail on boardwalk
  - Relocate trail to the roadside
LOSSAN

- Second busiest intercity corridor in the nation
- 8 million passengers per year
- 30,000+ freight cars per year
- About $1 billion of goods moved
- Federally designated route for defense access
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