10 Challenges to SLR Implementation in 10 Minutes - View from Local Flood Control*

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*One flood engineers mini-rant…
#1 – Simplistic Adaptation
“Cartoons” Minimize Complexity

- “Cartoon” representations of adaptation can ignore complexity (*i.e.* massive redevelopment)
- Avoids discussion of factors such as private property rights, CEQA, costs and permitting
- Openly discuss trade-offs (lose-lose)
#2 – Singular Focus on Green “Solutions”

- Wetlands are very important but not always sufficient for flood protection
- Most agency/NGO presentations are only this...
- Higher SLR values may will wash out these “solutions”
#3 – Difficulties in Moving Large Volumes of Fill

- Earthwork is highly complex
- Not only sourcing large quantities, but physically moving it (trucking, dredging, loading, GHG emissions)
Trucks, trucks, trucks
#4 – Lack of Knowledge on Cost-Effective Implementation

- Need more focus on engineering pilots to reduce costs for adaptation
- Some ecotone levee projects showing erosion issues
#5 - Primary Source of Urban Flooding Up Creeks and Rivers Has No “Natural Solution”

- Major areas of existing development in these areas (redevelop?)
- Need to look closely at tidal barriers flood gates on some creeks
#6 – CEQA/NEPA Limits Adaptation

- CEQA actually only looks at a project’s impact on the environment, not the environment’s impact on the project (i.e. SLR impacts)
- First in time, first in protection (i.e. utilities)
- What is “baseline” in a changing environment?
- Easy to “kill” projects
#7 - State and Local Permits

- Permitting can be difficult and expensive (BRRIT may be one solution)
- Focus on single species at expense of habitats or protecting people
- Ecosystems are always changing – why is bay edge circa 1900 the goal
- Permits require expensive monitoring and analysis
- Costs are out of scale. Some projects are abandoned or never even started
#8 – Funding of So-Called “Tool Boxes”

- “Tools” that aren’t tools to flood agencies
- “Tool boxes” should be checked and scored for citations and used for a year or two afterwards
- The “Tools” are mostly GIS based models
- Need different tool boxes for different users
#9 – How Grant Funding is Decided

- Restrictions on dredging, hard infrastructure
- No funding for maintenance
- No more GIS flood maps needed…. (USGS maps circa 2009)
- Need larger pool of deciders…
#10 – Lack of Focus on Need for Both Hard and Soft Engineering (green/gray)

- Ecotone levees will typically need traditional pump stations being them
- Can’t do green without some gray and effectively do flood protection
- Post flooding, push will be for hard engineering so we will need to do both
#11 – Hard to Find Real Funding/Tech Support for Flood Protection

- No real funding for flood protection projects – difficult to obtain FEMA and Corps funding
- FEMA and USACE not really interested in certifying levees – how will they address ecotone levee?
- Could USACE be technically involved in vetting ecotone/horizontal levee design and construction? Other technical issues
Final Thoughts

- At least 10 to 20 years into Focused Bay SLR response – what have we accomplished? Is it enough? Money spent
- What are our goals? Habitat protection or people protection? What about conflicts?
- Much confusion and disconnect at the local level - where the flood agencies live
- Is the money really there? And for what and whom?
- Is governance really changing? Nature of bureaucracy
- Dealing with real people is eye opening