

CALENDAR ITEM

39

A)
) Statewide
S)

12/17/09
P. Thayer
B. Dugal
J. Smith

**CONSIDERATION OF "A REPORT ON SEA LEVEL RISE PREPAREDNESS"
STAFF REPORT TO THE CALIFORNIA STATE LANDS COMMISSION
AND
STAFF RECOMMENDATIONS RELATED TO ADDRESSING
SEA LEVEL RISE IN PROJECT REVIEW AND APPLICATION PROCESSING**

At the June 1, 2009 meeting of the California State Lands Commission (Commission), members of the Commission expressed concerns on the issue of sea level rise and the implications for California's economic and social future. The Commissioners requested that staff conduct a survey to assess the extent to which the Commission's major grantees and lessees have considered the potential impacts of sea level rise on facilities that are located on sovereign lands under the Commission's jurisdiction.

Pursuant to the Commission's request, on August 10, 2009, staff sent out 104 surveys to its major grantees and lessees. Of those 104 surveys, 40 responses were received. The survey included questions related to identifying existing facilities and the life expectancy of these facilities; whether the respondent has considered the effect of sea level rise on its facilities; how its facilities would be impacted by projected sea level rises of 16" (by the year 2050) and 55" (by the year 2100); what actions the respondent was considering to address sea level rise, including an estimate of cost; and whether the respondent was considering adaptation strategies to mitigate for sea level rise.

"A Report on Sea Level Rise Preparedness" (Report), attached as Exhibit A, summarizes the results of the survey; the efforts of California, federal agencies, and other coastal states in addressing sea level rise; and includes recommendations that may be considered by the Commission to better assess the impacts of sea level rise on existing facilities and future development proposals for lands under its jurisdiction. The Report is also available on the Commission's web site at www.slc.ca.gov.

CALENDAR ITEM NO. 39 (CONT'D)

Survey Results

Based on the answers provided by the respondents, staff concluded that the majority of the Commission's major grantees and lessees have not yet begun to comprehensively consider the issue of sea level rise. The Ports of Oakland and San Francisco responded that its facilities would be subject to occasional to frequent flooding based on sea level rises of 16" and 55". Both Ports believe that adaptation strategies to address sea level rise in the Bay Area must be considered on a regional and state level, such as the proposed amendments to the San Francisco Bay Conservation and Development Commission's Bay Plan.

The San Diego Unified Port District (SDUPD) responded that its facilities would not be greatly impacted by a sea level rise of 16"; however, a 55" rise in the sea level would likely result in substantial impacts and potential inundation of certain facilities in both urban and wildlife areas. The SDUPD's environmental review process requires the consideration of sea level rise for substantial modifications to existing facilities and for all new development. The SDUPD will be preparing a Climate Action Plan that will include identifying strategies to adapt to the effects of climate change and sea level rise.

The Port of Los Angeles (Port) responded that some possible flooding and wave damage would occur from a 55" rise in sea level. The Port is planning a study to identify vulnerable facilities, develop a response option analysis plan, and incorporate sea level rise considerations in its design guidelines.

Several of the respondents maintain marine terminals and/or oil and gas facilities on sovereign lands who operate the facilities pursuant to a lease from the Commission. These lessees generally concluded that their facilities would not be impacted by sea level rise.

Efforts of California, Federal Agencies and Other Coastal States

A myriad of state agencies, departments, boards, commissions, and universities are involved in California's efforts to address the issues of climate change and sea level rise. The Climate Action Team (CAT), established by the Governor on June 1, 2005, is lead by the Secretary of the California Environmental Protection Agency, and includes the Secretary of the Business, Transportation, and Housing Agency, the Secretary of the Department of Food and Agriculture, the Secretary of the Resources Agency, the Chairperson of the Air Resources Board, the Chairperson of the Energy Commission, and the President of the Public Utilities Commission.

CALENDAR ITEM NO. 39 (CONT'D)

The Report documents the major efforts ongoing in California, one of which is the development of the State's Climate Adaptation Strategy (CAS). The CAS will summarize the best known science on climate change impacts to California, assess California's vulnerability to the identified impacts, and then outline solutions that can be implemented within and across state agencies to promote resiliency.

Another major effort currently underway is a Sea Level Rise Assessment Report, which will advise how California should plan for future sea level rise and include information on sea level rise projections, impacts on state infrastructure, and a discussion of future research needs. At the direction of the California Resources Agency, the report will be prepared by an independent panel of experts and is to be completed by December 1, 2010.

On the federal side, the Report discusses current legislative proposals being considered by Congress, the efforts of federal agencies, including the U.S. Environmental Protection Agency (EPA), the U.S. Geological Survey (USGS), the National Oceanic and Atmospheric Administration (NOAA), the U.S. Department of Transportation, and the U.S. Army Corps of Engineers (Corps). As an example, on July 1, 2009, the Corps issued Circular No. 1165-2-211, which requires that potential sea level rise changes are to be considered in every Corps coastal activity as far inland as the extent of estimated tidal influence. Future sea level rise projections must also be incorporated in the management, planning, engineering, design, construction, operation and maintenance of its projects. The policy will help levee districts plan for the projected gradual changes in sea levels.

Many coastal states are also taking steps to address the potential impacts of sea level rise. Governors of several states, including Florida, Louisiana, Maryland, New Jersey, New York, South Carolina, Virginia, and Washington have issued Executive Orders establishing various climate change commissions and advisory committees to consider the potential effects of global climate change, including sea level rise. According to the Pew Center on Global Climate Change, some 36 states have completed or are in the process of completing comprehensive Climate Action Plans.

Recommendations

Commission staff has compiled a list of recommendations for Commission consideration.

1. Direct staff to continue giving careful consideration to the effects of sea level rise, including impacts to hydrology, soils, geology, transportation, recreation, and

CALENDAR ITEM NO. 39 (CONT'D)

other resource categories in all environmental determinations. Direct staff to recommend feasible alternatives, project modifications, mitigation, or a combination of these measures, to avoid or reduce significant impacts.

2. Direct staff to undertake an inventory of existing leases to identify improvements/infrastructure vulnerable to projected sea level rises of 16" and 55".
3. Direct staff to add a request for information concerning the potential effect of sea level rise on the proposed project to the Commission's Surface Leasing Application Form, Part III, Section B: Assessment of Environmental Impacts. If applicable, require applicants to indicate how they plan to address sea level rise and what adaptation strategies are planned during the projected life of the project.
4. Consider amending the Commission's Application Package to require that all new coastal development projects consider the implications of and include adaptation strategies for projected sea level rises of 16" and 55", depending on the projected life expectancy of the project.
5. Where appropriate, staff should recommend project modifications that would eliminate or reduce potentially adverse impacts from sea level rise, including adverse impacts on public access.
6. Adopt engineering design standards requiring major facilities to withstand a defined storm event, such as a 100-year storm, taking into account sea level rise over the life of the project.

The Commission is addressing the effects of rising sea level on marine oil terminals through a revision to its Marine Oil Terminal Engineering and Maintenance Standards (MOTEMS). A revision to the 2007 California Code of Regulations, Title 24, Part 2, California Building Code, Chapter 31F, Marine Oil Terminals includes a new Section 3103F.5.3.4 Sea Level Rise (SLR), which will require all marine oil terminals to consider the predicted sea level rise over the remaining life of the terminal. Upon approval by the California Building Standards Commission, the revisions should go into effect January 1, 2011.

CALENDAR ITEM NO. 39 (CONT'D)

7. Include a provision in future leases requiring Lessees to comply with any provisions or standards that may be adopted by any regulatory agency that addresses sea level rise.
8. Continue to monitor changes from sea level rise in California and coordinate with and seek advice and expertise from other federal, state, or local agencies on this issue.
9. Give careful consideration to future Boundary Line Agreements and Title Settlements. Include a standard provision in such agreements stating that the Public Trust easement will move with submergence or when subject to the ebb and flow of the tide.
10. Collect current information on the mean high tide line including, if necessary, conducting boundary surveys along the coastline and bays, and possibly some inland waterways.
11. Evaluate structures (wharves, docks, levees, breakwaters, piers, seawalls, flood control structures, etc.) subject to the ocean environment for structural integrity and potential hazards as sea levels rise.
12. Continue to evaluate offshore platforms in state waters based on American Petroleum Institute Recommended Practices.
13. Send the proposed changes to the Commission's Application Package addressing sea level rise to all grantees for their consideration and use.
14. Provide copies of this Report to the survey recipients for their consideration and use and post the Report on the Commission's website.
15. Report back to the Commission in one year on the progress made by Commission staff and its grantees.

It is important to note that additional budget appropriations may be necessary in order for staff to implement Recommendations 3, 10, and 11. Staff does not anticipate the need for legislation at this time. However, staff may make further recommendations, including legislation, depending upon the annual review recommended by staff of progress made to address sea level rise.

CALENDAR ITEM NO. 39 (CONT'D)

EXHIBIT:

- A. "A Report on Sea Level Rise Preparedness", Staff Report to the California State Lands Commission, December 2009

RECOMMENDATIONS

IT IS RECOMMENDED THAT THE COMMISSION:

1. DIRECT STAFF TO CONTINUE GIVING CAREFUL CONSIDERATION TO THE EFFECTS OF SEA LEVEL RISE, INCLUDING IMPACTS TO HYDROLOGY, SOILS, GEOLOGY, TRANSPORTATION, RECREATION, AND OTHER RESOURCE CATEGORIES IN ALL ENVIRONMENTAL DETERMINATIONS. DIRECT STAFF TO RECOMMEND FEASIBLE ALTERNATIVES, PROJECT MODIFICATIONS, MITIGATION, OR A COMBINATION OF THESE MEASURES, TO AVOID OR REDUCE SIGNIFICANT IMPACTS.
2. DIRECT STAFF TO UNDERTAKE AN INVENTORY OF EXISTING LEASES TO IDENTIFY IMPROVEMENTS/INFRASTRUCTURE VULNERABLE TO PROJECTED SEA LEVEL RISES OF 16" AND 55".
3. DIRECT STAFF TO ADD A REQUEST FOR INFORMATION CONCERNING THE POTENTIAL EFFECT OF SEA LEVEL RISE ON THE PROPOSED PROJECT TO THE COMMISSION'S SURFACE LEASING APPLICATION FORM, PART III, SECTION B: ASSESSMENT OF ENVIRONMENTAL IMPACTS. IF APPLICABLE, REQUIRE APPLICANTS TO INDICATE HOW THEY PLAN TO ADDRESS SEA LEVEL RISE AND WHAT ADAPTATION STRATEGIES ARE PLANNED DURING THE PROJECTED LIFE OF THE PROJECT.
4. CONSIDER AMENDING THE COMMISSION'S APPLICATION PACKAGE TO REQUIRE THAT ALL NEW COASTAL DEVELOPMENT PROJECTS CONSIDER THE IMPLICATIONS OF AND INCLUDE ADAPTATION STRATEGIES FOR PROJECTED SEA LEVEL RISES OF 16" AND 55", DEPENDING ON THE PROJECTED LIFE EXPECTANCY OF THE PROJECT.
5. WHERE APPROPRIATE, STAFF SHOULD RECOMMEND PROJECT MODIFICATIONS THAT WOULD ELIMINATE OR REDUCE POTENTIALLY ADVERSE IMPACTS FROM SEA LEVEL RISE, INCLUDING ADVERSE IMPACTS ON PUBLIC ACCESS.
6. ADOPT ENGINEERING DESIGN STANDARDS REQUIRING MAJOR FACILITIES TO WITHSTAND A DEFINED STORM EVENT, SUCH AS A 100-YEAR STORM, TAKING INTO ACCOUNT SEA LEVEL RISE OVER THE LIFE OF THE PROJECT.

CALENDAR ITEM NO. 39 (CONT'D)

7. INCLUDE A PROVISION IN FUTURE LEASES REQUIRING LESSEES TO COMPLY WITH ANY PROVISIONS OR STANDARDS THAT MAY BE ADOPTED BY ANY REGULATORY AGENCY THAT ADDRESSES SEA LEVEL RISE.
8. CONTINUE TO MONITOR CHANGES FROM SEA LEVEL RISE IN CALIFORNIA AND COORDINATE WITH AND SEEK ADVICE AND EXPERTISE FROM OTHER FEDERAL, STATE, OR LOCAL AGENCIES ON THIS ISSUE.
9. GIVE CAREFUL CONSIDERATION TO FUTURE BOUNDARY LINE AGREEMENTS AND TITLE SETTLEMENTS. INCLUDE A STANDARD PROVISION IN SUCH AGREEMENTS STATING THAT THE PUBLIC TRUST EASEMENT WILL MOVE WITH SUBMERGENCE OR WHEN SUBJECT TO THE EBB AND FLOW OF THE TIDE.
10. COLLECT CURRENT INFORMATION ON THE MEAN HIGH TIDE LINE INCLUDING, IF NECESSARY, CONDUCTING BOUNDARY SURVEYS ALONG THE COASTLINE AND BAYS, AND POSSIBLY SOME INLAND WATERWAYS.
11. EVALUATE STRUCTURES (WHARVES, DOCKS, LEVEES, BREAKWATERS, PIERS, SEAWALLS, FLOOD CONTROL STRUCTURES, ETC.) SUBJECT TO THE OCEAN ENVIRONMENT FOR STRUCTURAL INTEGRITY AND POTENTIAL HAZARDS AS SEA LEVELS RISE.
12. CONTINUE TO EVALUATE OFFSHORE PLATFORMS IN STATE WATERS BASED ON AMERICAN PETROLEUM INSTITUTE RECOMMENDED PRACTICES.
13. SEND THE PROPOSED CHANGES TO THE COMMISSION'S APPLICATION PACKAGE ADDRESSING SEA LEVEL RISE TO ALL GRANTEES FOR THEIR CONSIDERATION AND USE.
14. PROVIDE COPIES OF THIS REPORT TO THE SURVEY RECIPIENTS FOR THEIR CONSIDERATION AND USE AND POST THE REPORT ON THE COMMISSION'S WEBSITE.
15. REPORT BACK TO THE COMMISSION IN ONE YEAR ON THE PROGRESS MADE BY COMMISSION STAFF AND ITS GRANTEES.