DRAFT Outline
Water Sector Adaptation to Climate Change Impacts
California Climate Adaptation Strategy Update 2012
July 18, 2012

I. Water Sector Vulnerability to Climate Change
   • Changes in hydrology affecting frequency, magnitude, and duration of extreme events
     (flooding and drought) affecting water quantity, quality, and infrastructure
   • Reduction in snowpack storage affecting water supply reliability and hydropower
   • Rising sea levels affecting coastal flooding and Delta integrity and water quality
   • Changes in water quality of streams, lakes, and the ocean affecting ecosystems and public health

II. Current Actions to Adapt to Climate Change in the Water Sector
   • 2009 water legislation package, including SB X7-7 (“20x2020”)
   • 2009 State Water Resources Control Board (SWRCB) recycled water policy and 2011/2012 California Public Utilities Commission (CPUC) proceeding on recycled water
   • Climate change requirement in Integrated Regional Water Management (IRWM) grant program
   • *Climate Change Handbook for Regional Water Planning* and regional climate change specialists in DWR Regional Offices to work with local water planners
   • Climate change adaptation in the *California Water Plan Update 2009*
   • Reconvening of DWR’s Climate Change Technical Advisory Group
   • National Research Council sea level rise study
   • Paleohydrology studies of the San Joaquin, Sacramento, and Klamath River basins
   • Public Interest Energy Research (PIER) Vulnerability and Adaptation Studies

III. Priority Climate Change Adaptation Strategies Going Forward
   • Implement a 21st century Western observing and forecasting system for extreme precipitation, to support flood management and transportation operations
   • Avoid placing new infrastructure in harm’s way, and assess the vulnerability of existing infrastructure to extreme events
     o Incorporate flood bypasses, easements, and setback levees into regional flood management, to address the future uncertainty of flood flows
     o Utilize low impact development and other methods in state and regional stormwater permits to restore the natural hydrograph
     o Supplement the federal Guidelines for Determining Flood Frequency Analysis to support local and regional flood planning
     o Include climate change in flood hazard mapping and otherwise quantify the climate change hazard in State flood planning
     o Enhance emergency response and recovery capabilities at all levels
     o Direct public funding for water infrastructure away from vulnerable areas
   • Practice Integrated Resource Planning across sectors
     o Improve water supply reliability and quality for agricultural and urban demand and environmental needs through the IRWM process
     o Conduct vulnerability assessments as part of IRWM planning
o Coordinate IRWM planning with other community and land use planning processes, including transportation blueprints, local general plans, and sustainable communities planning (SB 375)
  o Encourage water conservation beyond 20x2020
  o Address public health impacts of water and climate change on vulnerable populations
• Incorporate climate change into SWRCB processes, including:
  o Water rights issues, such as instream flows, stormwater and flood water capture and use, and groundwater protection and use;
  o SWRCB Ocean Plan;
  o 401 certification considerations for Federal Energy Regulatory Commission dam re-licenses and US Army Corps of Engineer wetland permits;
  o Risk assessments in grants and loans for water quality infrastructure; and
  o Monitoring and data collection, basin plans, and water quality permits and policies
• Manage Sacramento-San Joaquin Delta climate change vulnerability by implementing:
  o Water quality and water rights measures in the San Francisco Bay/Sacramento River and San Joaquin River Delta and its tributaries;
  o Delta Stewardship Council Plan; and
  o Bay Delta Conservation Plan
• Promote environmental stewardship and biodiversity and forestry adaptation by integrating ecosystem connectivity into water management projects
• Implement a statewide, multi agency groundwater strategy that emphasizes regional groundwater management and quality and statewide accountability

IV. Related Planning, Investment, and Regulatory Processes
• California Water Plan Update and Water Quality Control Plans (Basin Plans)
• Delta Plan, Bay-Delta Conservation Plan, and SWRCB Delta regulatory processes
• Wildlife Action Plan and Fire and Resource Assessment Program
• Environmental Goals and Policy Report
• Integrated Energy Policy Report and AB 32 Scoping Plan Update
• Water resources investment fund and/or future water bond; State Revolving Funds

V. Climate Change Adaptation Research Needs in the Water Sector
   Existing SWRCB and DWR research needs summaries as appendices