Section VI: Climate Change

Within the five year horizon of this Plan, the District is much more concerned regarding the current reliability (or lack thereof) of the State Water Project (SWP) than it is about climate change. However, the potential effects of climate change, which will impact both the District's local area and result in statewide changes that could affect the State Water Project and its water supplies in the longer term, are a substantial concern beyond the planning horizon of this Plan.

DWR estimates indicate that by 2050 the Sierra Nevada snowpack, which provides 65 percent of California's water supply, will be significantly reduced. Much of the precipitation is expected to fall as rain instead of snow during winter and cannot be stored in our current water system for later use. The climate is also expected to become more variable and extreme, bringing more droughts and floods. Thus the District will need to be prepared to adapt to greater variability in weather patterns.

A. Potential Climate Change Effects

Within the next 20 years, DWR expects that water supplies, water demand, sea level, and the occurrence and increased severity of floods will be affected by climate change. Some of these potential changes are presented below.

The District will consider the following climate change effects, many of which are already documented in California, and reviewed in the latest State Water Project Reliability Report prepared by DWR.

1. Water Demand

Predicted results of climate change, such as, shorter winters, more hot days and nights, and a longer irrigation season could potentially increase water demand in the District, and increase competition for water by others, if the affects of climate change occur.

2. Water Supply and Quality

Reduced snowpack, shifting spring runoff to earlier in the year has the potential to impact water supply and quality, if they should occur.

3. Sea Level Rise

The Delta, which is in the hub of the SWP, could be at greater risk to increased salinity should sea level rise occur. Sea level could continue to rise if warming of the oceans continues. This could also affect Delta levee stability in low-lying areas.

4. Disaster

Disasters may become more frequent if climate change continues as some scientists believe.

B. Specific Points to Consider

As the District continues to address near-term periods of water deficiency from the State Water Project during the five years of this planning cycle, it will consider the following potential climate change impacts projected by DWR in its longer term plans and work with DWR and State Water Contractors in planning for:

1. Irrigation Demand

Irrigation demand may increase if temperatures rise and rainfall becomes more variable.

2. Permanent Crops

Permanent crops, which make up the majority in the District, may be adversely affected by climate change and may be more difficult to shift to alternative crops, causing reduced flexibility for adapting to changing climatic conditions.

3. Flooding Risk

Flooding risk may increase as a result of more severe rainfall patterns and warmer winter rains. This could affect water supply and conveyance of State and local water distribution facilities.

4. Snowpack

Snowpack may significantly diminish if the climate warms. Diminished snowfall in the mountains and earlier runoff may result in reduced SWP water supply and other sources derived from Sierra Nevada Snowpack.

5. The Sacramento-San Joaquin River Delta

The Sacramento-San Joaquin River Delta could be vulnerable to impacts of climate change, if it occurs. One impact could be sea level rise. Higher sea levels could make it more difficult to export water from the Delta with the existing infrastructure and may result in reduced water deliveries over time.