

DATE: October 16, 2014
TO: Members of the Water Supply Advisory Committee
FROM: Mark Mesiti-Miller
SUBJECT: Santa Barbara Water Supply Summary from the Chamber's Community Leadership Visit

This year's Santa Cruz Chamber - Community Leadership Visit was to Santa Barbara. This location was chosen, in part, because of some similarities between Santa Barbara's water issues and those in Santa Cruz. The visit occurred in early September of this year.

Attached is a short summary of what the Chamber collectively learned about Santa Barbara's water issues on the visit. There are some interesting strategies here the WSAC might consider as we continue to work on Santa Cruz's water issues.

Community Leadership Visit Report:

Why Santa Barbara Water Supplies Exceed Requirements

Water department managers from districts in Santa Barbara County described their current situation as a "water crisis" in presentations to the Chamber's Community Leadership Visit (CLV). But their water supply problems don't begin to compare to those facing water districts in Santa Cruz County.

For instance, the two largest districts on Santa Barbara's south coast have instituted drought-motivated conservation measures but, unlike Santa Cruz, neither has had to institute mandatory rationing. The Goleta district was particularly proud of their 10% reduction in water use, exceeding the targets of their Stage 1 Water Shortage measures first introduced in March of 2014.

How have these Santa Barbara districts avoided the more intrusive conservation measures the City of Santa Cruz (30% reduction) and the Soquel Creek Water District (proposed 30% reduction for the next 20 years)? The annual average rainfall in Santa Barbara is about 1/3rd less than in Santa Cruz. Per capita use of water in Santa Barbara water district is 130 gross gallons per day compared to 95 g.g.p.d. in Santa Cruz. So, Santa Barbara's comparative water advantage is not attributable to either greater natural supply or better water conservation.

They attribute their relative success in addressing water issues to two initiatives. First, the relative security of their water supply is the result of a long-term public commitment to diversifying sources. Second, it is the result of strategic management of both those sources and of their delivery systems.

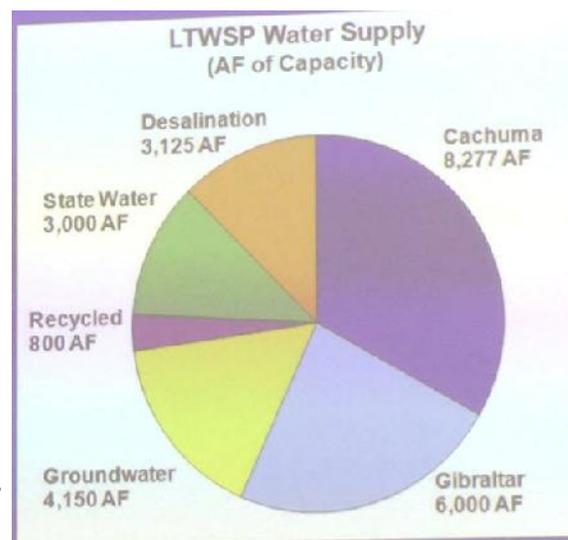
Water Supply History.

In the 1980s the Santa Barbara City Water District was almost entirely dependent upon two sources: surface water and ground water sources. This already provided them with greater diversity than either the Santa Cruz district, which is almost entirely dependent upon surface water (i.e. current rainfall), or the Soquel Creek District, which relies entirely on ground water (i.e. stored rain water.)

During the early 1980s plans were implemented to construct a water recycling plant and a gray-water delivery system. In the late 1980s Santa Barbara also joined with the Goleta and Montecito water district to develop a desalination plant. The recycled water plant came online in 1989, the desalination plant was completed in 1992.

And the Goleta and Santa Barbara districts joined with other districts in Santa Barbara and San Luis Obispo Counties to construct a link to the state water system.

The result has been to provide a range of supply resources that don't depend entirely on local rainfall. The graph of the Santa Barbara water supply



resources depicts the average annual water resources available to the City's water department.

They include annual rights to a portion of the water stored in the Cachuma and Gibraltar reservoirs (Santa Barbara's annual share is 14,277 acre feet (AF)), an estimated average ground water capacity of 4,150 AF, recycled water of 800 AF per year, state water of 3,000 AF per year, and desalinated water of 3,125 AF per year. These sources provide a total estimated average annual capacity of 22,352 against an estimated annual demand of 14,000 AF.

In addition the 1989 drought was a catalyst for the development of a conservation plan which has succeeded in a long-term reduction in per capita water demand to the current 130 g.g.p.d. level.

Strategic Water Planning.

The drought that began in 1989 also made clear that for these resources to insure water availability in a changing environment it was necessary to develop a flexible strategic plan for their use. These plans have permitted both the Santa Barbara and Goleta districts to provide strategies adaptive to complex circumstances without relying on draconian measures such as a moratorium on water connections or significant increases in water rates.

The chart (to the right) reflects the Santa Barbara City Water District's Drought current Annual Supply Strategy. The strategy document is revised annually beginning with one critical assumption: if the region is not currently in a drought, the District assumes that a drought will begin in that planning year and last for six years. Once a drought does begin, the District updates the drought water strategy to adapt to current supply conditions assuming that drought will continue for the full six years.

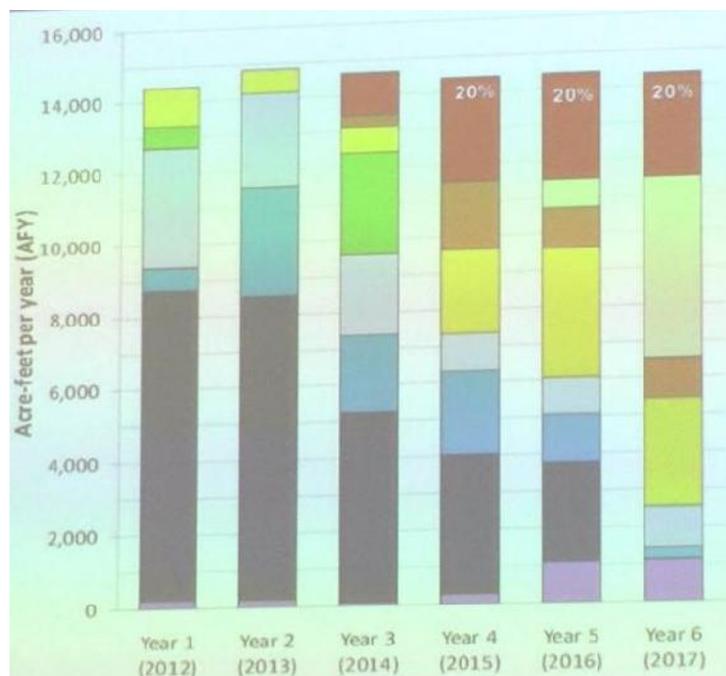
California's current drought began in 2012. This chart describes the amount of water drawn from each resource in 2012 and 2013 and the expected water draws for the years 2014 through 2017 from those and other sources. These sources and expected sources include the following (from the bottom block on each bar to the top).

Recycled water.

(Purple box at the bottom) This relatively small source has been shutdown in 2014 to rehabilitate the plant, permitting significantly greater production in subsequent years.

Cachuma Reservoir.

(Black box) Historically the largest single source, this reservoir is currently about 45% full. Shared by several water districts, it was necessary this year to fund and install a pumping station to insure that water will reach the gravity-feed distribution pipes. At current drought levels the District does not expect to be able to draw any water from this reservoir in the year 2017.



Cachuma Reservoir Carry-over.

(Darker-blue box) As a result of prior supply management the District has "banked" rights to water in the Cachuma reservoir in excess of its annual allowance. These banked amounts will be drawn down by the end of 2017 if the drought continues.

Gibraltar Reservoir and the Mission Tunnel.

(Light-blue box) The City's older reservoir, Gibraltar, and its transport system, the Mission tunnel (which is also collects a relatively small amount of ground water) will provide water through 2017.

State Water.

(Green box) State water is predominantly sourced in the Sierras and piped from the Central Valley. While it does permit banking of water rights, delivery is much less certain than other locally controlled sources. The District does not expect to receive any state water in 2015.

Ground Water.

(Yellow box) The City has been able to minimize its pumping of ground water for the last decade, creating a relatively secure supply for later years of the drought.

Water Purchases.

(Brown box) Availability is both uncertain and certain to be quite expensive compared with other sources. Note that the District expected to begin water purchases in 2014.

Extraordinary Conversation.

(Red box). This reflects the expected saving from the City's voluntary Stage 2 conservation declaration in 2014 and likely Stage 3 conservation requirements beginning in 2015.

Desalination.

(Light-green box) The key element for later drought years will be the restart of the District's mothballed desalination plant. Without this resource the City's would either have to increase its conservation measures to be more than a 50% reduction in use or find other sources of water.

It is also noteworthy that in beginning the 2015 revision of the Districts conservation strategy it has begun planning for a seven year drought.

The Santa Barbara and Goleta water systems provides significantly greater flexibility than those in Santa Cruz County. By not using some available resources in a given year it is possible for those districts to create reserve supplies for drought periods, to perform maintenance on significant sources without risk to supplies, and to limit the use of more expensive sources such as desalination for periods of need.