



Main San Gabriel Basin Watermaster Overivew of Proposed Assessment

November 3, 2016

Discussion Overview

- Main San Gabriel Basin Watermaster Background / Role
- Current Main San Gabriel Basin Groundwater Crisis
- Imported Water & The Role Of The MWDs
- Watermaster Response To The Current Situation
- Special Assessment Overview



Regional Water Management

Main San Gabriel Basin Watermaster – Background / Role

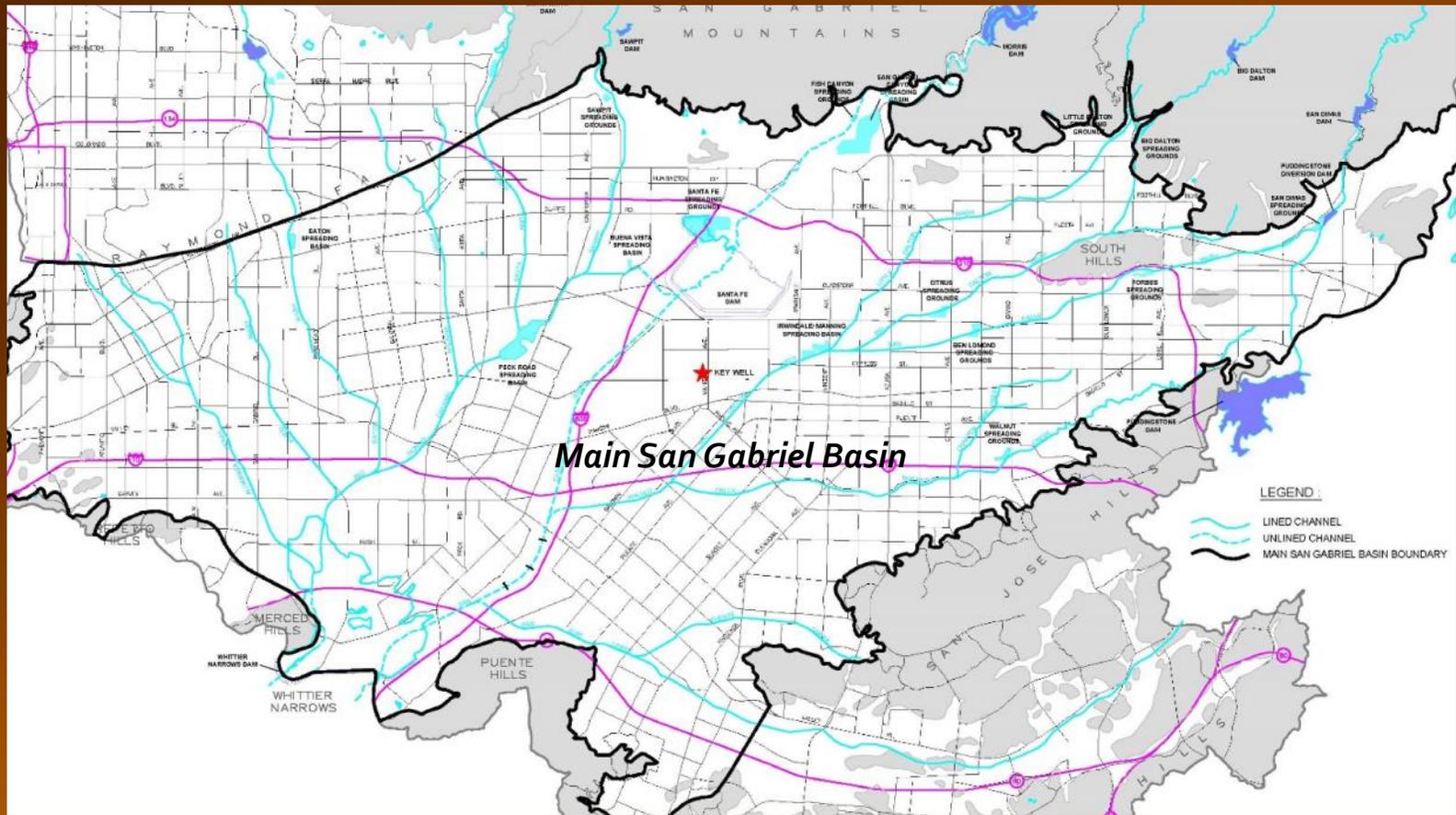
How Is Groundwater In LA Managed?

- In Los Angeles County, there are 5 adjudicated groundwater basins, including:
 - Central Basin
 - West Coast Basin
 - Main San Gabriel Basin
 - Raymond Basin
 - Upper Los Angeles River Area Basin
- Each adjudicated basin was established by court order
- The courts have stipulated rules / regulations for each basin, and each of the basins have established management structures to oversee the local groundwater supply

What Basin Are We Located In?

- We are located in the Main San Gabriel Basin (MSGB), which is managed by the MSGB Watermaster
 - The MSGB covers around 167 square miles
 - 1.275 million people live in the MSGB service area
 - The MSGB has an estimated 8.6 million acre-feet of water storage capacity
 - When the MSGB was adjudicated in 1973, there was around 7.85 million acre-feet of water stored in the MSGB
 - Today, there is an estimated 7.42 million acre-feet of water stored in the MSGB
 - 1 acre-foot equals 325,851 gallons
 - Around 30 retail water producers rely on local water supplies in the MSGB to serve municipal residents / customers

Main San Gabriel Basin



What Is The Watermaster's Role?

- The Watermaster was created in 1973 through a “friendly” adjudication process
- Pursuant to the court judgement, water rights were defined for around 190 parties, and the Watermaster was granted the following authorities:
 - Control of managing the MSGB groundwater supply
 - Flexibility to initiate cooperative agreements
 - Regulate and control pumping
 - Purchasing replacement water
 - Determining the annual operating safe yield for the MSGB



Regional Water Management

Current Main San Gabriel Basin Groundwater Water Crisis

How Much Water Do We Use In The MSGB?

- Since 1980, water demand in the MSGB has averaged 261,306 acre-feet / year
- However, during the past decade (2006 – 2016), conservation efforts have reduced water use in the MSGB to an average of 237,000 acre-feet / year
- Enhanced conservation efforts have further reduced recent water use in the MSGB
 - In 2015/16, water demand in the MSGB was 201,498 acre-feet

Does The MSGB Have Enough Water?

- The MSGB currently has around 7.42 million acre-feet of stored groundwater
- To determine if that amount is sufficient, the Watermaster monitors the water level at the Baldwin Park Key Well (Key Well)
 - The safe operating range at the Key Well established by the Watermaster is between 200 feet – 250 feet
 - Each foot of elevation change is equal to around 8,000 acre-feet of water
- Currently, the Key Well level is at a historic low of 172.2 feet

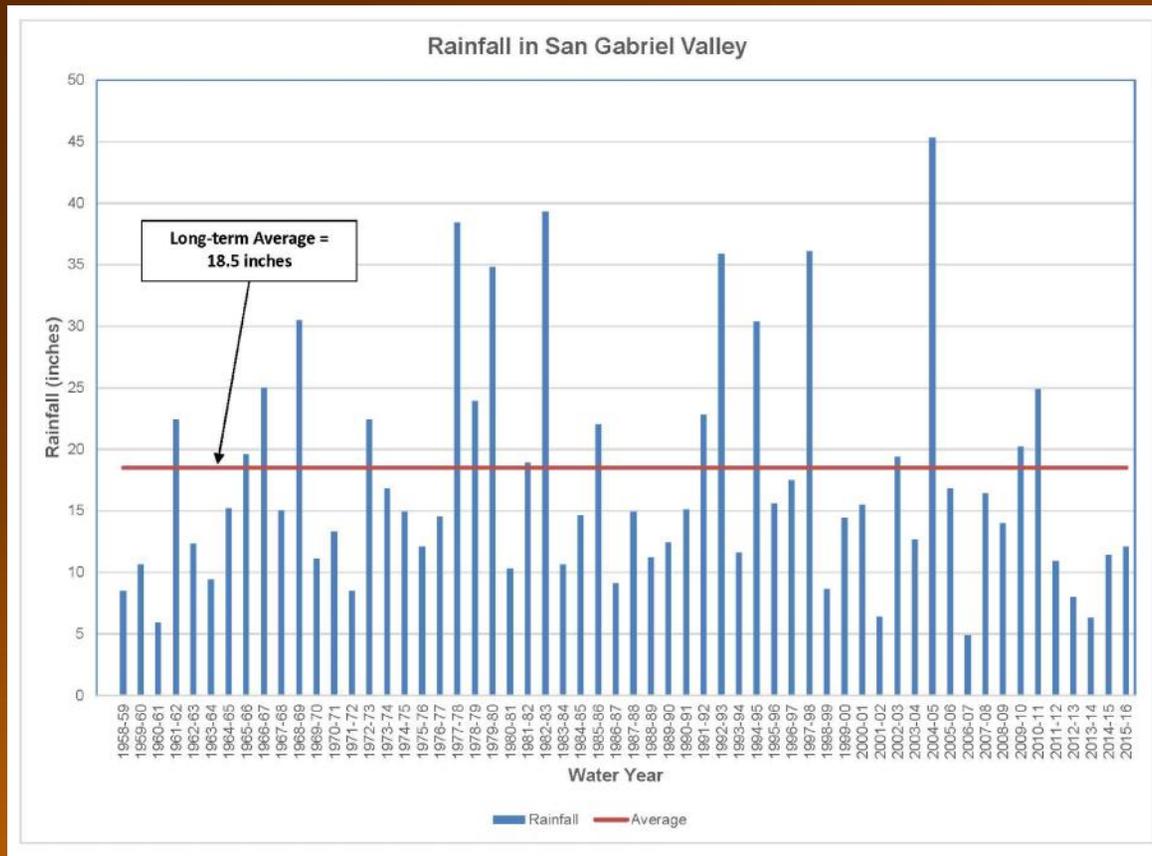
Why Should We Be Concerned About The Current Key Well Depth?

- The groundwater situation is critical
- If the Key Well falls to 165 feet, the Watermaster has modeled the following impacts:
 - Around 20 water production wells will be totally out of commission
 - The MSGB will experience an estimated 30% reduction in water production capacity
- If the MSGB groundwater levels are not restored, it could result in the need to implement massive capital improvements to enable the continued delivery of water to our customers

How Did The MSGB Water Levels Drop So Far So Fast?

- The current drought in Southern California is the worst in history
 - The drought has reached its 5th year and has created an unprecedented water crisis in the MSGB
- Rainfall over the past five years has averaged around 9 inches / year
 - The long-term average rainfall is 18.5 inches / year

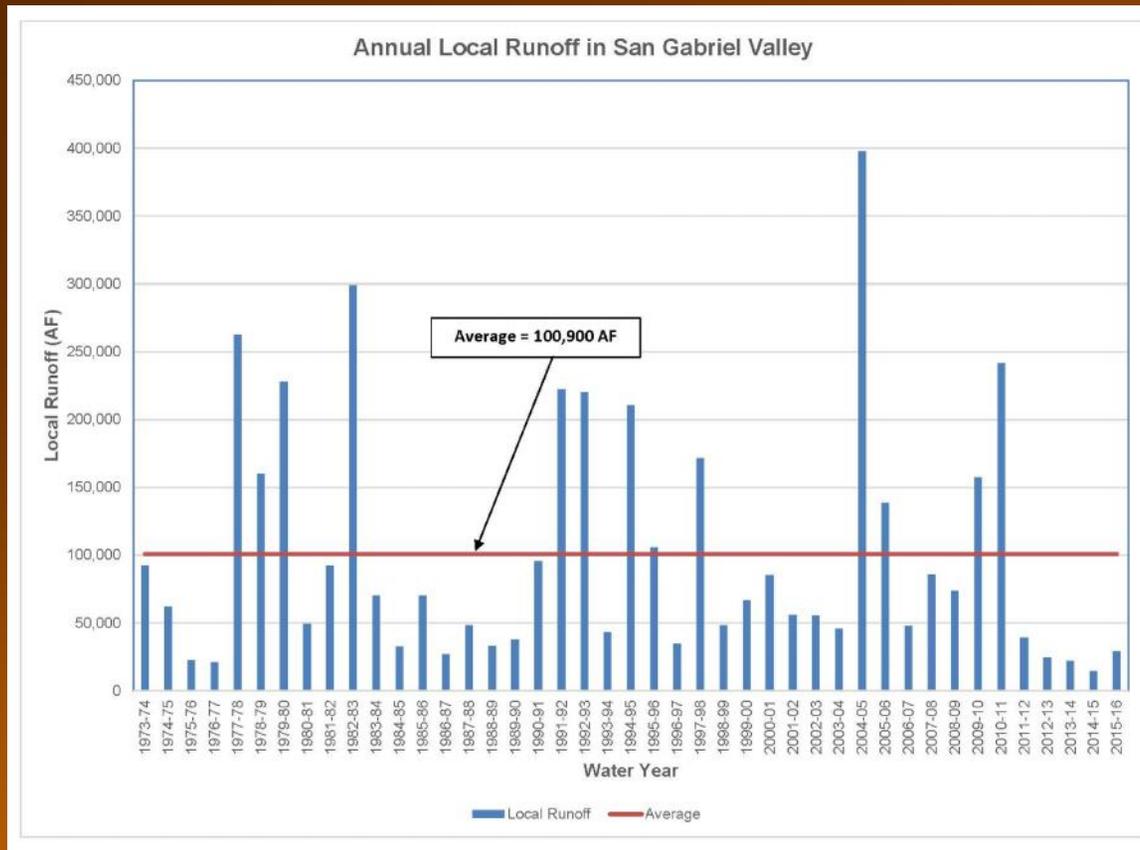
Rainfall In The San Gabriel Valley



What Direct Impact Has The Drought Had On Groundwater?

- The total local replenishment of the MSGB during the past 5 years has been around 130,000 acre-feet
 - Historically, the long-term annual average local replenishment of water is 100,900 acre-feet per year
- This means that the drought situation has caused an estimated total loss of local runoff of around 400,000 acre-feet of water
 - This represents nearly 50 feet of elevation at the Key Well
 - The current Key Well level of 172.2 feet is nearly 28 feet below the low end of the safe operating range of 200 feet

Annual Local Runoff In The San Gabriel Valley



How Does The MSGB Normally Recharge Its Groundwater?

- On average, the MSGB draws out more water than it puts back into the basin
 - Average annual usage: 230,000 acre-feet per year
 - Average annual replacement: 160,000 acre-feet per year
 - 100,000 acre-feet / year in local runoff
 - 40,000 acre-feet / year in untreated imported water
 - 20,000 acre-feet / year in treated imported water

Wait... On Average, We Normally Overdraw Water From The MSGB?

- On average, water use in the MSGB outpaces our ability to recharge by around 70,000 acre-feet / year
- To make up the difference, we have historically relied on wet, high-rain years to keep the MSGB groundwater levels between 200 feet – 250 feet at the Key Well
 - Current stormwater capture facilities allow us to fully capture around 30" - 35" of rain during any single year
- The current drought situation has created an unprecedented situation
 - Groundwater levels have fallen so far that there is no realistic way for us to rely on future high-rain years to return the basin to a safe operating level



Regional Water Management

Imported Water & The Role Of The MWDs

Can We Use Imported Water To Solve The Problem?

- There are three (3) Responsible Agency's (or municipal water districts) that supply the MSGB with supplemental (or imported) water
 - Upper SGV Municipal Water District
 - San Gabriel Valley Municipal Water District
 - Three Valleys Municipal Water District
- Each Responsible Agency acquires imported water from two primary sources
 - State Water Project
 - Colorado River

So Why Don't We Just Import Water?

- There are environmental concerns with the supplemental water from the Colorado River, which limits one potential import source
- The State Water Project has also been impacted by the drought, and the average available allocation during the past five years from that supplemental source is down 42%
 - It is also important to note... if the current Delta Fix is implemented, it will not increase water supplies to us here locally – the plan will only improve water delivery reliability

What Other Obstacles Are There To Importing Water?

- Other challenges associated with importing water include:
 - Financial cost of imported water
 - Need funding to be able to purchase additional supplemental water
 - Physical capabilities
 - Water transport capabilities, along with the capacity of our spreading grounds, create import challenges
 - Timing of when imported water is available
 - Seasonal changes and Metropolitan restrictions on when we can import water also create challenges



Regional Water Management

Watermaster Response To The Current Situation

How Is The Watermaster Currently Managing The Groundwater Crisis?

- Each year, the Watermaster determines the Operating Safe Yield (OSY) for the MSGB
- That OSY is established based on water levels at the Key Well and other hydrogeological factors
- The current OSY has been established at 150,000 acre-feet / year
 - The OSY dictates how much actual water each producer is allowed to pull out of the ground
 - However, given that there is no limit on how much water each supplier can produce, those that draw in excess of their water rights have to pay a Replacement Water assessment fee
 - Those fees are used to purchase imported water to make-up the difference between the OSY limits and actual production limits

Can We Manage The Situation By Controlling The Operating Safe Yield?

- Managing the OSY is an important tool being used by the Watermaster, however, that tool does not allow us to increase groundwater capacities in the MSGB
 - The OSY is geared towards ensuring that we don't get further behind
- However, the issue we have now on the water supply side
 - Since we have not been getting the approximate 100,000 acre-feet / year of stormwater infiltration, we need to develop a plan to increase supplemental water supplies in the MSGB



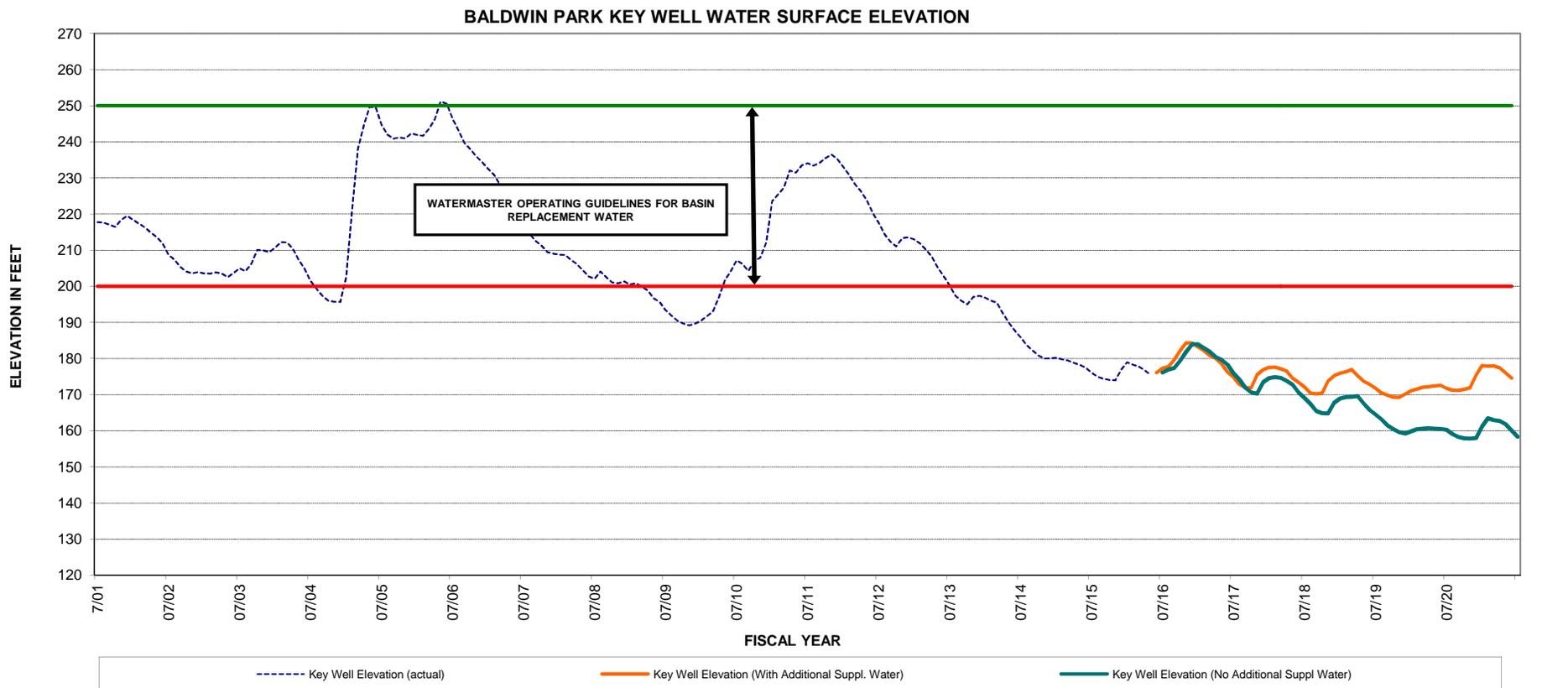
Regional Water Management

Special Assessment Overview

What Else Is The Watermaster Doing To Try And Manage The MSGB?

- The Watermaster is currently working on developing a new plan to manage the groundwater levels in the MSGB
 - The proposal involves establishing an increased administrative assessment that will allow the Watermaster to purchase additional imported water
 - The assessment fee is proposed to be phased in gradually to allow the Watermaster to purchase and import around 32,000 acre-feet of water each year
- If implemented, this would allow the Watermaster to purchase enough water to increase the Key Well elevation by around 16+ feet during the next 5-6 years

Assessment Impact On Key Well Levels



Stormwater Is Also Part Of The Solution

- The Watermaster is also working in coordination with LA County Flood Control and other municipal agencies to improve stormwater capture
- Six (6) potential new stormwater capture projects identified by the Watermaster
 1. Walnut Creek Spreading Basin – Almost complete!
 2. Peck Road Spreading Basin
 3. Olive Pit
 4. Buena Vista Spreading Basin
 5. San Gabriel Canyon Spreading Grounds
 6. Miller Pit
- These projects contemplate the potential capture of 15,000 acre-feet / year of additional “new water”

Questions?