

LOGS

Groundwater Basin Presentation

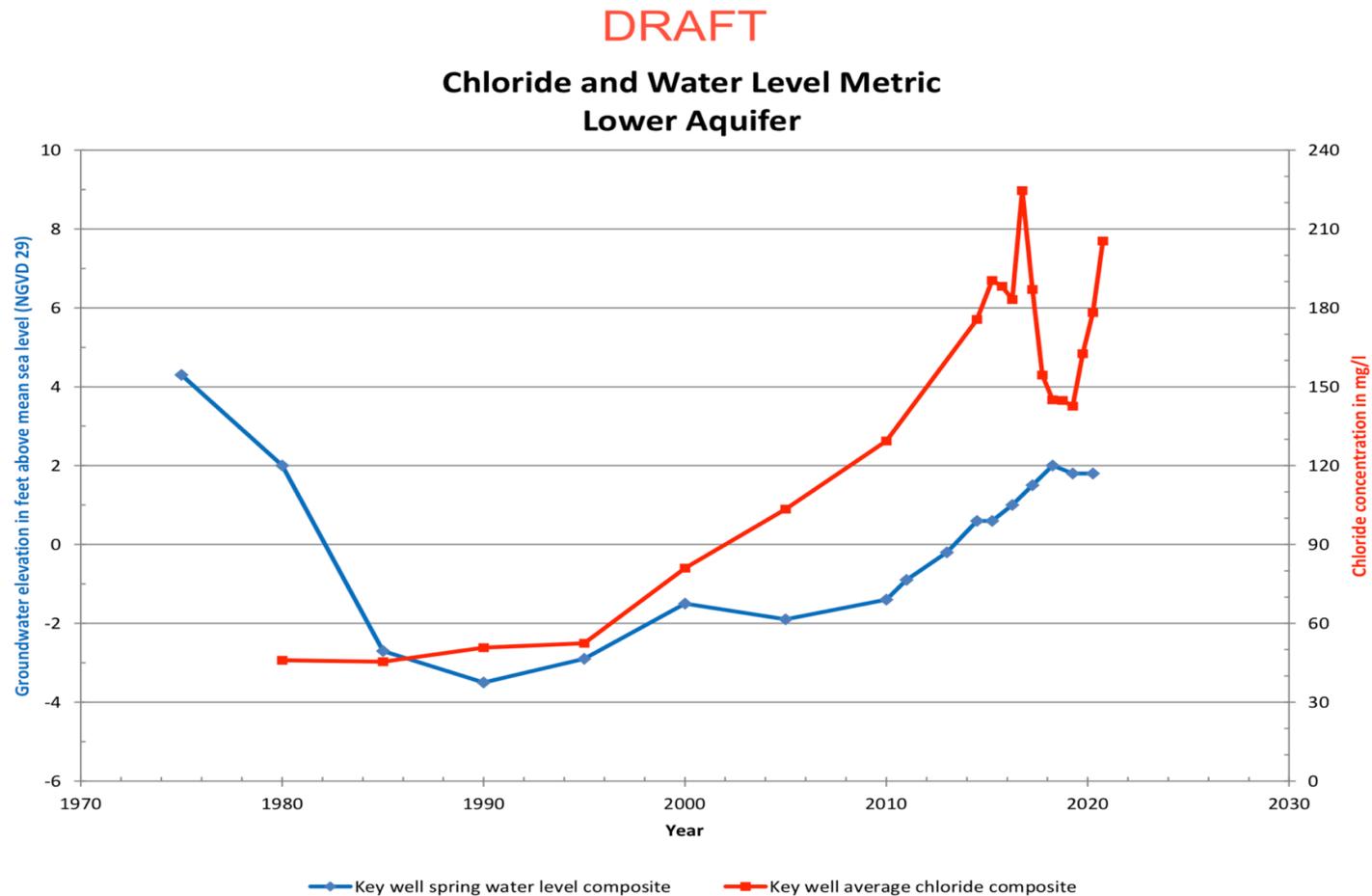
Our Main Goal

- ❖ Our main goal is for the Basin to provide a sustainable water supply for the families, businesses, farms, and natural resources of the area for many generations to come.
- ❖ We are not opposed to development. We support smart-growth that preserves and restores precious natural resources, including the Los Osos Basin and environmentally sensitive habitat.

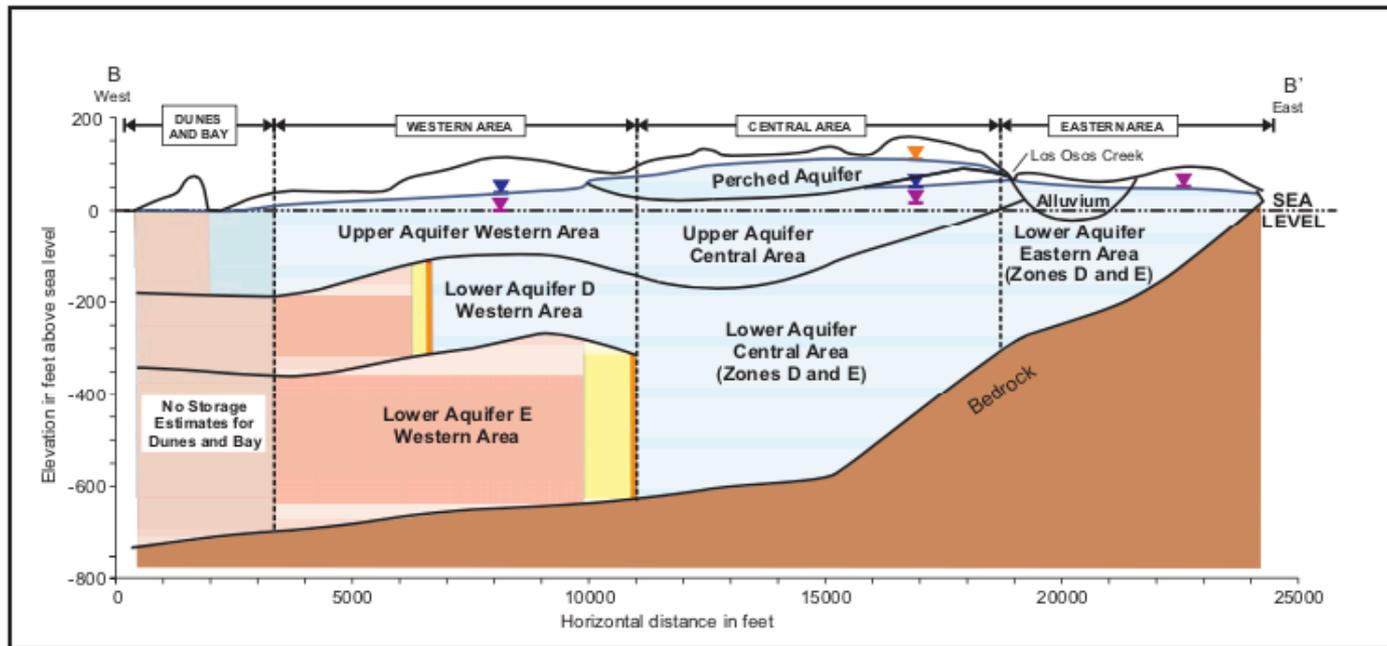
The Problem

- ❖ Seawater intrusion caused by overdraft has destroyed a major part of our sole source of water over the past 40 years due to inadequate action.
- ❖ Seawater intrusion continues to destroy the Basin because water levels in much of the Basin are at or below mean sea level (msl) when they must be 8' or more above msl to stop seawater intrusion.
- ❖ The ISJ Group, now making up the Basin Management Committee (BMC), acknowledged in 2010 and 2014, that the problem is urgent and that bold and decisive action is needed—but bold and decisive action has not been taken.
- ❖ The Basin is now being threatened with further overdraft and seawater intrusion by a County plan to add 30% more development over the Basin although available evidence indicates the Basin may not be sustainable for the current population.

2020 Chloride and Water Level Metric Draft Update Graph



2019 Annual Monitoring Report, Figure 19



Cross-section alignment shown in Figure 18

Explanation

- | | | | |
|---|---|---|-----------------------------|
|  | Groundwater in Storage <250 mg/l Chloride 2018 |  | Perched Aquifer Water level |
|  | Groundwater in Storage >250 mg/l Chloride 2005 |  | Upper Aquifer Water level |
|  | Change in Groundwater in Storage >250 mg/l Chloride Winter 2005-2019 |  | Lower Aquifer Water level |
|  | Fall 2019 seawater intrusion front | | |

NOTE: Inland movement of intrusion front between Fall 2018 and Fall 2019 shown in Figure 18 is for Lower Aquifer Zone D. There is no evidence of further inland movement of the intrusion front in Zone E.

Figure 19
Basin Storage Compartments
Los Osos Groundwater Basin
2019 Annual Report

Cleath-Harris Geologists

3 Key Elements of a Solution

1. The County approves no new development over the Basin until it can show with **conclusive evidence** that there is a sustainable water supply to support the current population and any proposed new development without harm to the Basin or other natural resources.
2. The County and Basin Management Committee (BMC) maximize the most cost-effective and environmentally sustainable seawater intrusion, low water level, and nitrate mitigation programs in the near future to achieve measureable goals and objectives ASAP.
3. The County and BMC implement a Basin wide funding mechanism and ordinance within the year that spread all basin-related costs equitably and require all users of the Basin to participate in programs, including water use efficiency programs and metering of all water use.

We respectfully request that LOCAC support these elements of a comprehensive plan and we encourage you to also support any of the more specific requests we presented to the BMC in a letter dated March 12, 2021. That letter also further explains these key elements and our positions.

Key Element #1

The County approves no new development over the Basin until it can show with **conclusive evidence** that there is a sustainable water supply to support the current population and any proposed new development without harm to the Basin or other natural resources.

- ❖ **Conclusive evidence** is defined as “...evidence that cannot be disputed...(or) contradicted by any other evidence” (Legal Dictionary of the Free Dictionary). It is a higher standard of evidence than “substantial evidence,” which is the usual standard that applies to agencies factual conclusions, for example in the context of approving an EIR or plans such as the Los Osos Community Plan (LOCP).

Key Element #1 is required by the Coastal Commission

- ❖ Special Condition 6 of the LOWWP Coastal Development Permit (CDP) states:
 - ❖ *Wastewater Service to Undeveloped Properties within the service area shall be prohibited unless and until the Estero Area Plan (also referred as the Los Osos Community Plan or LOCP) is amended to identify appropriate and sustainable buildout limits, and any appropriate mechanisms to stay within such limits, based on conclusive evidence indicating that adequate water is available to support development of such properties without adverse impacts to ground and surface waters, including wetlands and all related habitats.*

What **conclusive evidence** of a sustainable water supply looks like

- ❖ Clear and measurable goals and objectives, including interim objectives set for water levels, chloride levels, and nitrate levels.
 - ❖ The goals and objectives would be set to ensure, with a margin of safety, basin water levels are high enough, nitrate levels are low enough, and seawater intrusion fronts have retreated far enough for the Basin to support the current development and any proposed new development through droughts, climate change, and other adverse conditions without undesirable effects occurring (e.g., seawater intrusion, well shut downs, or low water levels causing harm to aquifers or to habitat).
- ❖ A network of accurate and reliable monitoring sites sufficient in number and density to conclusively show that measurable goals and objectives are met.

The BMC and BMC Basin Plan are currently unable to provide **conclusive evidence** of a sustainable water supply

- ❖ The BMC and Basin Plan have no clear and measureable water level and chloride objectives
 - ❖ The Basin Plan includes Chloride and Water Level Metric targets, based on monitoring data, but the BMC recently recognized problems with the metrics and voted to have them reviewed and modified.

- ❖ The monitoring program has too few monitoring sites in the lower aquifers and it has reliability issues
 - ❖ The program has too few monitoring sites to accurately track seawater intrusion fronts in the lower aquifers, Zones D and E. and too few wells to accurately measure water levels and water quality throughout the Basin.
 - ❖ Many of the monitoring wells are production wells, or have well-bore leakage and/or mixed-aquifer screening, which can adversely affect the accuracy and reliability of data.

Basin management decision making currently relies too heavily on uncertain modeling, estimates, and assumptions

- ❖ The locations of seawater intrusion fronts in Zones D and E are estimated based on very few data points.
- ❖ Basin-wide water use is based on estimates since 50% of water pumped from the Basin is from unmetered private wells. The Basin Plan states that the lack of well-metering may result in irreversible harm to the Basin.
- ❖ The safe yield of the Basin is currently based on the assumption that annual average rainfall is 17.5” and that Broderson leach fields will eventually push back seawater intrusion. Average annual rainfall for the past 15 years has been 15.1” and the benefits of Broderson leach fields are uncertain.
- ❖ The BMC has deferred implementation of one or more infrastructure program measures despite advancing seawater intrusion based on uncertain modeling and the Water Level and Chloride metrics currently being reviewed due to BMC’s concerns for reliability and accuracy.

The LOCP and GMO do not base buildout limits, or the mechanisms to stay within those limits, on conclusive evidence of a sustainable water supply.

- ❖ The Los Osos Community Plan (LOCP) bases build out limits on modeling predictions that future Basin Plan programs will increase the Basin's "sustainable yield," but the Basin model has uncertainties and has not had an uncertainty analysis.
- ❖ The Growth Management Ordinance (GMO) sets a growth rate for development that can be adjusted annually after the first five years. However, much of the currently-proposed development will happen in the first two years because it is "exempt" from the growth rate. There is no conclusive evidence that the increase in demand won't harm the Basin by making seawater intrusion worse.
- ❖ The LOCP allows the Board of Supervisors (BOS) to change the GMO growth rate, but the criteria is vague and discretionary.
 - ❖ *If the data from the annual monitoring reports prepared for the Los Osos Basin Management Committee indicate that completed Basin Plan programs have been less or more effective in reducing groundwater demand, increasing the perennial safe yield, or facilitating seawater retreat as predicted in the Basin Plan then the development of new residential units shall be limited or increased accordingly. (Section 7.3 Community standards, Subsection D-4)*

Title 19 doesn't ensure a sustainable water supply

- ❖ The LOCP currently requires that “exempt” housing and other development meet a Title 19 retrofit requirement. However, Title 19 doesn't assure a sustainable water supply for the development for several reasons:
 - ❖ Offsetting a certain amount of water use doesn't ensure seawater intrusion will stop and the Basin will be sustainable.
 - ❖ Title 19 provides half the water savings of a program for the current population and the remaining conservation potential may be needed to achieve a sustainable Basin for existing development.
 - ❖ The County has not confirmed the benefits of the program with follow up studies.
- ❖ The BOS can remove the Title 19 requirement if they believe the Basin is being pumped at the modeled “sustainable yield.” However, the “sustainable yield” value based is an uncertain value based on estimates and assumptions embedded in the model.

Bottom Line

- ❖ The LOCP and GMO do not identify buildout limits and mechanisms to stay within those limits based on **conclusive evidence** that the Basin can sustainably support the development.
- ❖ **Clear and measurable objectives** must be met prior to approval of new development which conclusively show that mitigation programs have:
 1. raised and can maintain water tables at levels protective of the Basin
 2. reversed and can maintain seawater intrusion fronts at locations protective of the Basin.

Key Element #2

The County and Basin Management Committee (BMC) maximize the most cost-effective and environmentally sustainable seawater intrusion, low water level, and nitrate mitigation programs in the near future to achieve measureable goals and objectives ASAP.

- ❖ Sustainable mitigation programs recommended by the Basin Plan, Coastal Commission staff, the CSU Monterey Bay Watershed Institute, and other experts:
 - ❖ conservation
 - ❖ recycled water use
 - ❖ storm water recharge and reuse
 - ❖ leach fields for upper aquifer recharge
 - ❖ relocating wells
 - ❖ use of upper aquifer water for outdoor water use
 - ❖ injection of the lower aquifer with recycled water or treated storm water.

Note: The wastewater project is addressing nitrates, but there is evidence that nitrates are contaminating the lower aquifers so other actions such as well reconstruction may be needed.

Key Element #3

The County and BMC implement a Basin wide funding mechanism and ordinance within the year that spread all basin-related costs equitably and require all users of the Basin to participate in programs, including water use efficiency programs and metering of all water use.

- ❖ A development of a funding mechanism is required in the agreement between BMC members, referred to as the Stipulated Judgment (SJ). The SJ also provides a method for establishing a “zone of benefit” for basin-wide funding.
- ❖ The Basin Plan sets goals for mandatory conservation and equitable cost sharing Basin wide.
- ❖ The Basin Plan also proposes a County ordinance that requires metering of all water use. The same ordinance, or a similar one, could also be used to require basin-wide participation in Basin Plan programs.
- ❖ Condition 5 requires the County to spend \$5 million on mandatory conservation “...to help Basin residents to reduce ...water use as much as possible.” About \$3 million of the \$5 million remains unspent.

Conclusion

The LOSG believes that, after 40 years of seawater intrusion, a comprehensive plan that requires **conclusive evidence** of results is long overdue. For the plan to be effective, it must use the most cost-effective and sustainable solutions available and require all those who enjoy the benefits of the Basin to be involved in the solution. We hope you agree and will support the following key elements.

1. The County approves no new development over the Basin until it can show with **conclusive evidence** that there is a sustainable water supply to support the current population and any proposed new development without harm to the Basin or other natural resources.
2. The County and Basin Management Committee (BMC) maximize the most cost-effective and environmentally sustainable seawater intrusion, low water level, and nitrate mitigation programs in the near future to achieve measureable goals and objectives ASAP.
3. The County and BMC implement a Basin wide funding mechanism and ordinance within the year that spread all basin-related costs equitably and require all users of the Basin to participate in programs, including water use efficiency programs and metering of all water use.

Please refer our request to the Land Use Committee for review and recommendation.