

Appendix D: Status of Public Facilities

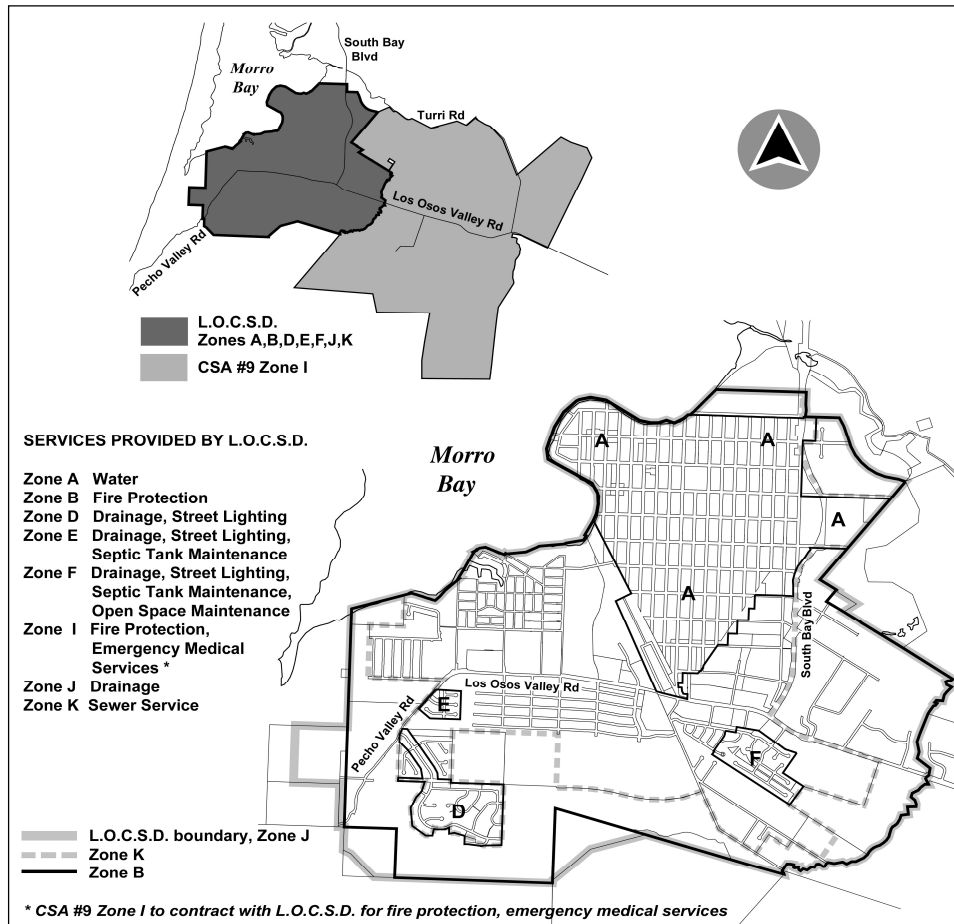
D.1 Introduction

To monitor the relationship between resources and demand levels, the county has developed the Resource Management System (RMS). The RMS monitors water supply, sewage disposal, schools, roads, air quality and parks, using three "levels of severity" to inform decision makers of current and potential deficiencies.

The status of resources monitored by the Resource Management System (RMS) is frequently updated as new information becomes available. Detailed resource information is included in the most recent edition of the Biennial Resource Summary Report. RMS procedures are fully discussed in Framework for Planning, Coastal Zone, Chapter 3.

Services in Los Osos are provided primarily through the Los Osos Community Services District (LOCSD). Within the boundaries of the LOCSD, some services are provided to the entire district and others to smaller specific zones of benefit. The LOCSD zones of benefit are shown in Figure D-1, below. Water service is also provided by Golden State Water Company and S & T Mutual Water Company in areas of the community not served by LOCSD. Some properties in the URL are served by private, individual wells. Irrigated agriculture just outside the URL also use private wells that use the groundwater basin as their source. Service areas for water supply are shown in Figure D-2.

Figure D-1: Services Provided by Los Osos CSD

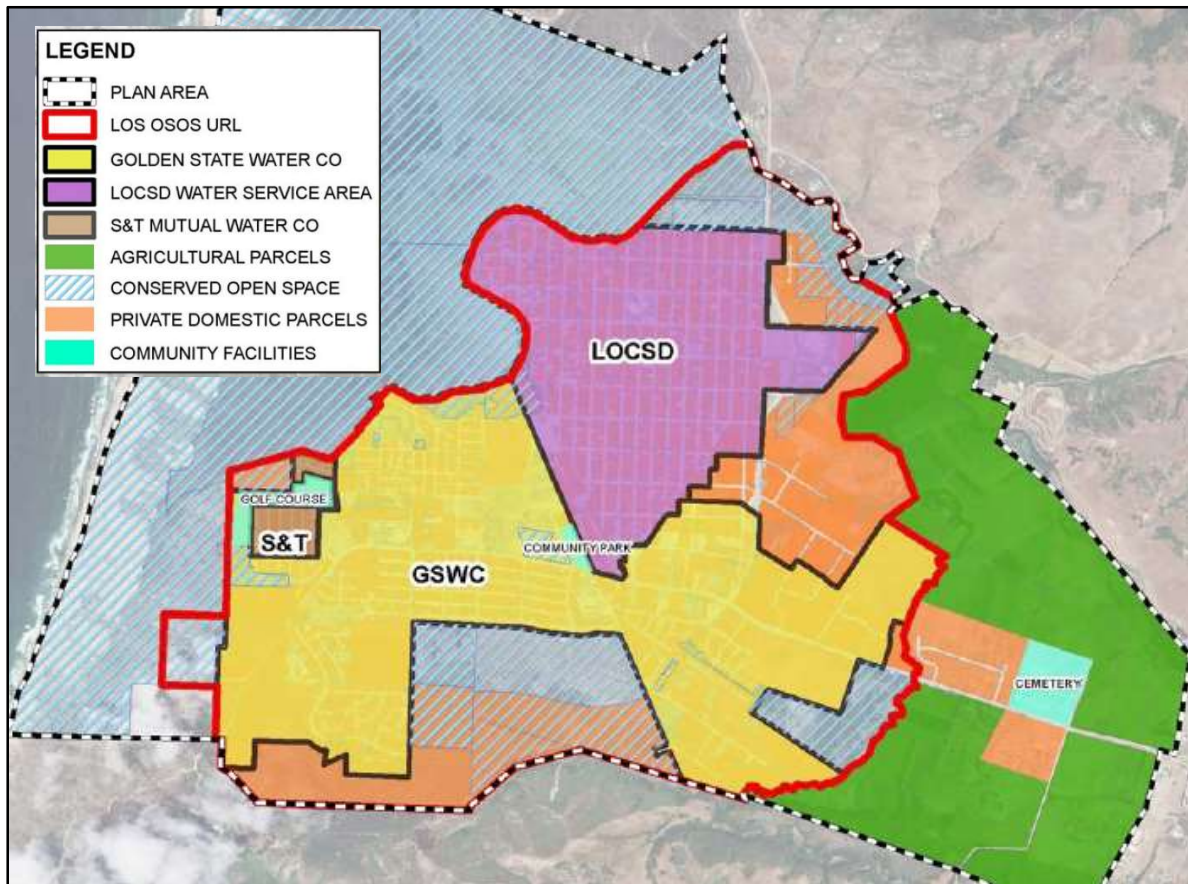


D.2 Water Supply

D.2.1. Background

The sole water source in the Los Osos area is groundwater from the Los Osos Groundwater Basin. The groundwater is withdrawn from the basin by private wells, for agricultural irrigation, and for municipal use by three principal water purveyors. The service districts for these municipal purveyors are shown in Figure D-2.

Figure D-2: Los Osos Water Purveyors



The basin is made up of several aquifer layers underlying Los Osos and the surrounding area. The upper and lower aquifers are the main sources of municipal and domestic water supplies. Due to water quality degradation of the upper aquifer from septic systems (nitrates), the water purveyors have been pumping from the lower aquifer. Groundwater extractions have exceeded the sustainable yield of the lower aquifer in the western area; this has resulted in seawater intrusion.

D.2.2. **Draft Basin Plan**

The Los Osos Groundwater Basin is under adjudication in the case of *Los Osos Community Services District v Golden State Water Company, et al.* [The 2015 Updated Basin Plan for the Los Osos Groundwater Basin \("Basin Plan"\)](#) was prepared by the three water purveyors, along with the County, as a part of the settlement of groundwater rights litigation, which was approved by the San Luis Obispo Superior Court in October 2015. As a result of the adjudication, a Public Review Draft of the *Basin Plan for Los Osos Groundwater Basin (Draft Basin Plan)* was developed and then released in August 2013. The *Basin Plan* was prepared by the Los Osos Community Services District, Golden State Water Company, S & T Mutual Water Company, and the County:

The [Draft Basin Plan Basin Plan](#) calls for reduced pumping in the lower aquifer, a decrease in overall basin water demand, and an increase in water supplies in the upper aquifer and lower aquifer (in the central and eastern portions). In order to access these new water supplies, the

water purveyors (with financial backing of the water consumers) will need to construct new infrastructure, for example, new groundwater production wells and distribution pipelines.

The Basin Plan analyzes the impacts of implementing various combinations of programs through use of a groundwater model for the multiple aquifers and recommended programs for immediate implementation to increase the sustainable basin yield to accommodate the existing demand and halt and reverse seawater intrusion over time. The Basin Plan also identifies possible combinations of programs to be implemented to accommodate buildout demand. The annual monitoring reports prepared for the Basin Management Committee provide updates on the program implementation status and program modifications made through the Plan's adaptive management provision.

Table DE-1 summarizes the eleven programs analyzed in the Basin Plan ~~Draft Basin Plan~~. The Plan includes an adaptive management provision that allows the Basin Management Committee charged with implementing the Basin Plan programs to modify the programs and develop new programs.

~~In order to support the community's existing population and possibly allow for marginal population growth, without even considering demands from future development, several programs would need to be~~ the Basin Plan recommends the following programs for immediate implementation under all future scenarios:

- M Groundwater Monitoring
- E Urban Water Efficiency
- U Urban Water Reuse
- A Infrastructure Program A (Shift to Uppper Aaquifer)
- C Infrastructure Program C (Shift to Central Area)
- P Wellhead Protection

~~The Basin Plan recommends a combination of the following programs for potential implementation to accommodate buildout water demand in Los Osos. In addition, the community will need to implement one additional infrastructure program in order to bring the basin into balance with the existing population. Depending on the next program implemented, a certain amount of new development may be authorized. These programs include:~~

- B Infrastructure Program B (Nitrate Removal Facility)
- D Infrastructure Program D (Shift to Central and Eastern Areas)
- G Agricultural Water Reinvestment
- ~~C Infrastructure Program C (Shift to Central Area)~~

~~The Basin Plan also analyzes the following programs but does not recommend them for implementation, based on the cost and water management principles identified in the Plan:~~

- S Supplemental Water (Brackish Water Desalination)
- I Imported Water

~~The Draft Basin Plan contains detailed discussions of the various strategies for managing the Los Osos Groundwater Basin. The following is a summary of the strategies analyzed in the Draft Basin Plan:~~

- ~~1. **Groundwater Monitoring [M].** A standardized groundwater monitoring program should be administered by the Los Osos Groundwater Basin Watermaster. The program would standardize monitoring and reporting procedures for the community's three purveyors. The program would allow continued monitoring of the two main~~

~~problems facing the basin: nitrate contamination in the upper aquifer and seawater intrusion into the lower aquifer.~~

~~The *Draft Basin Plan* also discusses two options for monitoring and reporting on private domestic wells overlying the basin. This can be accomplished through a voluntary program, or by adoption of a County ordinance requiring metering and monitoring of private wells.~~

~~**2.1. Urban Water Efficiency [E].** Under the water efficiency program, the County and purveyors would implement regulations and rebate programs to promote efficient water use in Los Osos. The measures in this program are largely based on the California Urban Water Conservation Council's Best Management Practices. The measures are intended to reduce residential water demand, reduce commercial and institutional water demand, educate the public, and apply restrictions to new development. The *Draft Basin Plan* seeks to reduce Los Osos's urban water demand to 1,450 acre-feet per year (AFY) for the current population and to 2,100 AFY for the community's buildout population.~~

Table D-1: Strategies for Managing the Los Osos Groundwater Basin

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Draft Los Osos Basin Plan Program and Purpose		Provides Data	Reduces Basin Water Demand	Shifts Pumping from Lower to Upper Aquifer	Shifts Lower Aquifer Pumping away from Western Area	Increases Perennial Yield	Promotes Water Quality	Draft Basin Plan Reference
RECOMMENDED PROGRAMS FOR IMMEDIATE IMPLEMENTATION – <i>The Draft Basin Plan recommends implementation of the following programs:</i>								
M	Groundwater Monitoring To collect and organize data to improve access, reporting, and data access efficiency	Y						Chap 7
E	Urban Water Use Efficiency To increase efficiency in urban water use, thus ensuring that a sufficient amount of water remains in the basin to stabilize the freshwater-seawater interface.		Y					Chap 8
U	Urban Water Reinvestment To maximize use of basin resources by reinvesting used urban water in the hydrologic cycle.		Y			Y		Sec 9.2.73
A	Infrastructure Program A To increase groundwater production to the upper aquifer without construction of nitrate removal facilities.			Y		Y		Sec 10.2
C	Infrastructure Program C To allow the purveyors to shift lower aquifer groundwater production from the Western Area to the Central Area.				Y	Y		Sec 10.4
P	Wellhead Protection To prevent drinking water source contamination.						Y	Chap 13

Table D-1: Strategies for Managing the Los Osos Groundwater Basin

<p>Draft Los Osos Basin Plan Program and Purpose</p>	<p>Provides Data</p>	<p>Reduces Basin Water Demand</p>	<p>Shifts Pumping from Lower to Upper Aquifer</p>	<p>Shifts Lower Aquifer Pumping away from Western Area</p>	<p>Increases Perennial Yield</p>	<p>Promotes Water Quality</p>	<p><i>Draft</i> Basin Plan Reference</p>
<p>ADDITIONAL PROGRAMS THAT COULD BE IMPLEMENTED TO ACCOMMODATE BUILDOUT DEMAND – <i>The Draft Basin Plan does not recommend implementation of the following programs:</i></p>							
<p>G</p>	<p>Agricultural Water Reinvestment To maximize use of basin resources by reinvesting used urban water for agricultural purposes.</p>	<p>Y</p>			<p>Y</p>		<p>Sec 9.4</p>
<p>B</p>	<p>Infrastructure Program B To maximize use of the upper aquifer through construction of additional wells and a community nitrate removal facility.</p>		<p>Y</p>		<p>Y</p>	<p>Y</p>	<p>Sec 10.3</p>
<p>D</p>	<p>Infrastructure Program D To increase groundwater production in the Eastern Area.</p>			<p>Y</p>	<p>Y</p>		<p>Sec 10.5</p>
<p>S</p>	<p>Supplemental Water To increase the supply of potable groundwater through brackish water desalination.</p>	<p>Y</p>				<p>Y</p>	<p>Chap 11</p>
<p>I</p>	<p>Imported Water To import water to Los Osos from a non-basin source.</p>	<p>Y</p>					<p>Chap 12</p>

The Basin Plan contains detailed discussions of these programs. The annual monitoring reports prepared for the Basin Management Committee provide updates on the program implementation status and program modifications made through the Plan's adaptive management provision. The goal and status of each program are summarized below, based on information from the 2016 - 2019 annual monitoring reports.

1. **Groundwater Monitoring [M].** The groundwater monitoring program is administered by the Los Osos Basin Management Committee. The program standardizes monitoring and reporting procedures for the community's three purveyors. The program allows continued monitoring of the two main problems facing the basin: nitrate contamination in the upper aquifer and seawater intrusion into the lower aquifer. The annual monitoring reports prepared for the program allow the Basin Management Committee to track the effectiveness of the implemented programs and make adjustments per the adaptive management provision.

Groundwater Monitoring [M]. A standardized groundwater monitoring program should be administered by the Los Osos Groundwater Basin Watermaster. The program would standardize monitoring and reporting procedures for the community's three purveyors. The program would allow continued monitoring of the two main problems facing the basin: nitrate contamination in the upper aquifer and seawater intrusion into the lower aquifer.

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The *Draft Basin Plan* also discusses two options for monitoring and reporting on private domestic wells overlying the basin. This can be accomplished through a voluntary program, or by adoption of a County ordinance requiring metering and monitoring of private wells.

2. **Urban Water Efficiency [E].** Under the water efficiency program, the County and purveyors would have implemented regulations and rebate programs to promote efficient water use in Los Osos. The measures in this program are largely based on the California Urban Water Conservation Council's Best Management Practices. The measures are intended to reduce residential water demand, reduce commercial and institutional water demand, educate the public, and apply restrictions to new development. The County required existing uses to retrofit plumbing fixtures before connecting to the Los Osos Water Reclamation Facility ("LOWRF"), which became operational in 2016. As of April 2020, only 44 properties remained to be retrofitted and connected to the sewer. The Basin Plan *Draft Basin Plan* seeks to reduce Los Osos's urban water demand to 1,450 acre-feet per year (AFY) for the current population and to 2,100 AFY for the community's buildout population. More efficient urban water use allows purveyors and well users to decrease the amount of groundwater extracted from the Basin to stabilize the freshwater-seawater interface.

3. **Water Reinvestment Programs [U & G].** The Water Reinvestment Program is part of the Los Osos Wastewater Project and it involves returning all water collected and treated by the wastewater project to the basin. This would be accomplished by direct percolation or reuse. The program is further divided into urban water [U] and agricultural irrigation [G]. In 2017, the urban water [U] portion came online and 452 AFY of recycled water from the LOWRF was reinvested to the Broderson (445 AFY) and Bayridge Estates (7 AFY) leach fields. The average wastewater flows were 200 AFY less than the anticipated volume of 780 AFY. In 2018, 505 AFY of recycled water was reinvested to the Broderson (486 AFY) and Bayridge Estates (20 AFY) leach fields. In 2019, 516 AFY of recycled water was reinvested to the Broderson (431 AFY) and Bayridge Estates (14 AFY) leach fields and 71 AFY to the Sea Pines Golf Course. The mounding at the leach fields is being monitored and is projected to take years to form; however, preliminary signs of a small mound were detected hydraulically downgradient of the Broderson leach field beginning in June 2017. As part of Basin Plan adaptive management, as of 2019, the Basin Management Committee had

[approved a contract for a Creek Discharge Program for recycled water from the LOWRF and approved funding for an urban storm water recovery project.](#)

- 4. Infrastructure Programs [A, B, C, & D].** The [Basin Plan ~~Basin Plan~~](#) includes four infrastructure improvement programs that would be implemented and funded by the water purveyors. These programs are focused on two strategies: a) allow groundwater pumping to shift from the lower aquifer to the upper aquifer and b) shift lower aquifer production away from the Western Area, where seawater intrusion is most pronounced.

[Program A](#) has been funded and is being fully implemented. This program focuses on actions that can be taken to increase upper aquifer production as much as possible without necessitating a community nitrate removal facility. [As of June 2020, one Upper Aquifer well on 8th Street remains to be complete, although it is fully funded and the design is complete.](#)

[Program B](#) would entail construction of a community nitrate removal system in order to maximize use of the upper aquifer. [As of June 2020, this program has not been initiated.](#)

[Program C](#) includes a set of infrastructure projects that would allow the purveyors to shift lower aquifer production from the Western Area to the Central Area. [As of June 2020, the first expansion well at Los Olivos was completed, and two additional expansion wells remain to be completed. The third expansion well may be deferred per the adaptive management process, based on the groundwater-pumping capacity of the second well.](#)

[Program D](#) includes construction of additional wells in the Eastern Area of the lower aquifer. [As of June 2020, this program has been deferred through adaptive management.](#)

- 5. Wellhead Protection [P].** The Wellhead Protection Program is designed to protect water quality by managing activities within a delineated source area or protection zone around drinking water wells.
- 6. Other Programs [S & I].** The [Basin Plan ~~Draft Basin Plan~~](#) addresses two other programs that are not included in its recommendations based on cost-effectiveness [and water management principles identified in the Plan](#). The Supplemental Water Program [S] would entail construction of a desalination facility to render brackish groundwater drinkable. The Imported Water Program [I] would import water from an outside source (e.g. State Water or Nacimiento Water) for urban use in Los Osos.

D.2.3. Projected Supply

Sustainable yield of a groundwater basin can be defined as the maximum quantity of water that can be annually withdrawn from a groundwater basin over a long period of time (during which water supply conditions approximate average conditions) without developing an overdraft condition. The [Draft Basin Plan ~~Basin Plan~~](#) estimates the [current](#) sustainable yield for a “No Programs” scenario [at](#) 2,450 acre-feet per year (AFY). [The programs recommended for immediate implementation are modeled to increase sustainable basin yield to 3,000 AFY.](#) Depending upon which [implementation ~~additional~~](#) programs are [undertaken ~~implemented to accommodate buildout demand~~](#), the [Basin Plan estimates the](#) sustainable yield [to ~~could~~](#) rise as high as [3,500,170 AFY](#), [under an aggressive implementation scenario.](#) [Under the ~~Draft Basin~~](#)

~~Plan's recommendation, sustainable yield would increase to 3,000 AFY.~~ Basin Plan programs that would increase sustainable yield include the infrastructure programs (A, B, C, and D) and the reinvestment programs (U and G).

D.2.4. Historical Demand

~~The Basin Plan estimates historical groundwater production across the Basin for the various water users within the Basin from 1970 to 2013, including municipal purveyors, private domestic users, community facilities (County Park, Memorial Park, etc.), and agricultural users (outside the LOCP area). The Basin Plan includes a population outside of the LOCP area and estimates the existing population at 14,600. Groundwater extractions have exceeded been below the sustainable yield of 2,450 760 AFY every year since 19792016. Table D-2 summarizes the estimated historical groundwater production between 2006 and 20185 per the January 2015 Basin Plan and the Los Osos Basin Plan Groundwater Monitoring Program 20185 Annual Monitoring Report The Draft Basin Plan indicates that groundwater extractions have exceeded the sustainable yield of 2,450 AFY every year since 1979. The peak quantity of groundwater extraction occurred in 1988 and is estimated at 3,720 AFY. The most recent extraction quantities (2012) are estimated at 2,610 AFY. The following Table ED-2 summarizes the pumping quantities in 2012.~~

Year	Purveyors	Domestic	Community	Agricultural	Total
2006	2,000	200	150	750	3,100
2007	2,030	200	150	750	3,130
2008	1,910	200	140	750	3,000
2009	1,850	200	140	750	2,940
2010	1,620	200	140	750	2,710
2011	1,570	200	140	750	2,660
2012	1,520	200	140	750	2,610
2013	1,470	200	140	750	2,560
2014	1,240	220	140	800	2,400
2015	1,010	220	140	800	2,170
2016	1,000	220	140	800	2,160
2017	1,050	220	130	670	2,070
2018	1,020	220	120	670	2,030

Source: 2019 Annual Monitoring Report

~~In addition to the continuing problem of overdraft, groundwater production has been distributed in such a way as to cause excessive pumping in some areas, resulting in sea water intrusion in the vicinity of Pecho Road. In other areas, pumping has not been sufficient to offset recharge of wastewater from on-site septic systems, resulting in rising water levels. The addition of new wells and revised pumping patterns are expected to solve this problem.~~

D.2.5. Comparing Projected Supply and Demand

~~The Los Osos community relies on implementation of the Basin Plan programs to have enough of a sustainable water supply to meet the projected buildout demand. The Basin Management Committee implementing the Basin Plan relies on ongoing monitoring to assess the effectiveness of the Basin Plan programs and accuracy of the Basin Plan assumptions to inform adaptive management efforts. The annual monitoring reports prepared for the Basin~~

Management Committee establish five metrics for monitoring the basin and the effectiveness of the implemented Basin Plan programs:

- Basin Yield Metric
 - Definition: annual groundwater production / annual sustainable yield * 100
 - Target Value: 80 or less
- Basin Development Metric
 - Definition: current estimated sustainable yield / 3,500 AFY * 100
 - Target Value: none
- Water Level Metric
 - Definition: average Spring groundwater elevation (feet above mean sea level) in Lower Aquifer monitoring wells
 - Target Value: 8 feet or more
- Chloride Metric
 - Definition: average concentration of chlorides in key Lower Aquifer wells
 - Target Value: 100 mg/L or lower
- Nitrate Metric
 - Definition: average concentration of nitrate in First Water key wells
 - Target Value: 10 mg/L or lower

Water-Related Standards for New Development. The water-related standards in Section 7.3 are based on the Basin Plan and account for the Basin Management Committee’s ongoing monitoring and adaptive management.

- Standards B1 and B2 require commitment from the water purveyor for service of new developments and determination of water capacity and service availability for all land divisions.
- Standard D1 prohibits new development until the Board of Supervisors adopts a resolution certifying successful completion and implementation of the Basin Plan programs recommended for immediate implementation, as amended or adjusted through adaptive management.
- Standard D2 requires a growth rate to be established for new dwelling units in the Los Osos Urban Area consistent with the available sustainable water supply based on the best available data, including the most recent annual monitoring reports prepared for the Basin Management Committee.
- Standard D2 also requires the annual growth rate to be revised on an annual basis and updated as needed to reflect changes in Basin Plan program effectiveness, modifications to the programs per the Basin Plan’s adaptive management provision, implementation of new Basin Plan programs, changes in water usage patterns, and updates in basin modeling.
- The growth rate is to be codified in the Growth Management Ordinance (Title 26). Residential units exempt from the Growth Management Ordinance are exempt from Standards D1 and D2 (e.g., affordable housing and accessory dwelling units).

Marginal Increase in Demand & Projected Supply with Basin Plan Programs Recommended for Immediate Implementation (M+E+U+AC+P). The Basin Plan estimates that completion of the programs recommended for immediate implementation while maintaining the existing population scenario (estimated as 2,230 AFY demand in the Basin Plan) would result in a basin yield metric of 74, water level metric of 10, and chloride metric of 65, which would meet the target goals for these metrics. The Basin Plan assumes that the difference between water demand for the existing population scenario and 80% of the estimated sustainable basin yield may be used for marginal population growth and the corresponding marginal increase in water demand. The Basin Plan estimates that 80% of sustainable basin yield with the programs recommended for immediate implementation completed is 2,400 AFY.

Major development in the Los Osos community has generally been stalled due to the Regional Water Quality Control Board's cease and desist order for septic system discharges within the Prohibition Zone and a condition of the Coastal Development Permit for the wastewater treatment plant that restricts service to undeveloped parcels until the Los Osos Community Plan and Habitat Conservation Plan for Los Osos are adopted. Of the programs recommended for immediate implementation in the Basin Plan that target demand reduction, the Urban Water Use Efficiency Program (Program "E") and the Urban Water Reinvestment Program (Program "U") are essentially complete as of June 2020. The efficiency program has been more successful at reducing demand than anticipated, and agricultural demand has slightly decreased since 2015 (670 AFY instead of 750 AFY). Therefore, the existing demand as of 2020 is less than the estimated demand for the existing population scenario in the Basin Plan.

The 2019 estimated demand for the Basin Plan Area is 1,900 AFY, which is 330 AFY less than the 2,230 AFY estimated demand for the existing population scenario with Programs "U" and "E" complete and 500 AFY less than the 2,400 AFY, 80% of the estimated sustainable yield with Programs M+E+U+AC+P complete. The 500 AFY margin could allow for an increase in existing demand without implementation of additional Basin Plan programs, but the margin is estimated based on Basin Plan assumptions about the basin and program effectiveness that need to be verified with ongoing monitoring.

Buildout Demand and Supply. The Los Osos Community Plan proposes a total buildout population of 18,000, representing an increase of 4,094 people, or approximately 30% increase over the existing population. This can be compared to the Basin Plan buildout population scenario of 19,850, with 97% of the population estimated to be within the URL (approximately 19,255). The Basin Plan reviewed the land use categories in the area as designated by the Estero Area Plan (EAP). In general, when compared to the EAP, the proposed Los Osos Community Plan envisions substantial decreases in land designated for residential and non-residential development, and corresponding increases in land designated for Open Space. The Basin Plan noted that existing residential usage represents almost 75 percent of all urban water use in Los Osos, which is generally made up of residential, commercial and institutional uses. The Basin Plan estimated that distribution of urban water uses would remain roughly the same. However, monitoring of community growth and water usage, and adjusting assumptions and projections for supply and demand of the groundwater basin, is strongly recommended throughout the Basin Plan. Standard D2 in Section 7.3 is consistent with this recommendation.

The Basin Plan estimates that implementing Program B would increase sustainable basin yield by 350 AFY to 3,350 AFY and implementing Program D would increase sustainable basin yield by 150 AFY to 3,500 AFY. The Basin Plan estimates water demand for future buildout of the Basin Plan Area to be 2,880 AFY with Programs "E" and "U" complete, 2,400 AFY with the agricultural reinvestment program [G] and 2,130 AFY with supplemental water for the Basin Plan Area [S], although the Plan does not recommend supplemental water. The Basin Plan recommends that total annual groundwater extraction not exceed 80% of the estimated sustainable annual basin yield to account for uncertainties in the projected basin yield and demand over time, such as reduced basin yield due to climate change or an increase in agricultural water demand. 80% of 3,350 AFY is 2,680 AFY, which is enough to meet the 2,400 AFY estimated buildout demand for the Basin Plan Area with Programs "E", "U", and "G" complete. The estimated buildout water demand for the Los Osos Community Plan is less than the buildout demand for the Estero Area Plan (EAP) that was assessed in the Basin Plan, as described above, which adds an additional safety margin. The Basin Plan estimates values for the water level and chloride metrics as well as the basin yield metric for different program combinations based on the projected buildout demand. These values are shown in Table D-3 below. Implementing Programs "B" and "G" are estimated to meet the target goal for all three basin metrics. The Basin Management Committee will need to consider monitoring results as well as these estimates as they practice adaptive management.

The *Draft Basin Plan* uses the Basin Yield Metric to assess basin sustainability. The yield metric is calculated by comparing basin groundwater production to the sustainable yield. A resulting ratio of less than 100 percent would indicate that the current production is sustainable. The *Basin Plan* goes further by setting a goal to keep the Basin Yield Metric at 80 percent. This creates a 20 percent margin of safety for the community.

Under current conditions, extractions from the Los Osos Groundwater Basin exceed sustainable yield. The resulting Basin Yield Metric is 107%, indicating that the basin is in overdraft. The recommended set of programs in the *Draft Basin Plan* would bring that metric down to 74% when considering a scenario in which there would be no further development. A more aggressive approach, though costly, could bring the metric as low as 42%, leaving a substantial marginal water supply to support new development.

The *Draft Basin Plan* projects future demand based on two different scenarios. The “No Future Development Scenario” (NFDS) assumes that no substantial new development would occur in the community. Depending on the programs implemented, projected demand may be reduced. For example, Program U (Urban Water Reinvestment) would reduce groundwater demand by reusing treated wastewater for irrigation of community park facilities.

The second scenario being considered would allow new development to occur such that the demand could rise to 80 percent of the sustainable yield, but no higher. This scenario allows calculation of future supportable population for the community. The ability to achieve this depends largely upon the completion of *Basin Plan* programs. Reduction in demand can also be achieved through importation of water and implementation of a program to irrigate agricultural lands with treated wastewater.

The following Table ED-3 summarizes sustainable yield and demand values under two different scenarios: (1) No Further Development Scenario (NFDS); and (2) assuming population growth up to an 80 percent Basin Yield Metric.

Table D-3: Basin Plan Program Combinations Sustainable Yield and Demand for Buildout						
Basin Plan Implementation Combination of Basin Plan Programs	New Program(s) to be Completed	Estimated Buildout Demand (AFY)¹	Estimated Sustainable Basin Yield (AFY)	Projected Basin Metrics		
				NFDS Demand (AFY) Basin Yield²	Demand @ 80% (AFY) Water Level (feet above msl)³	Supportable Population Chloride (mg/L)²
M+E+U+AC+P	-	2,880	3,000	96	NE	NE
M+E+U+ABC+P	B	2,880	3,350	86	NE	NE
M+E+UG+ABC+P	B + G	2,380	3,350	72	9	70
M+E+U+ABCD+P	B + D	2,880	3,500	82	8	85
M+E+UG+ABCD+P	B + D + G	2,380	3,500	68	10	60
Target Basin Metric:				<80	8+	<100

Notes

(1) Estimated buildout demand for the Basin Plan Area, based on the Estero Area Plan. The buildout demand for the Los Osos Community Plan is less than the Estero Area Plan.

(2) Source: Basin Plan, Table 46 *Most Likely Program Combinations*

(3) msl = mean sea level

NE = Not evaluated in the Basin Plan.

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- ~~(1) Sustainable Yield and NFDS Demand figures are derived from the *Draft Basin Plan*.~~
 - ~~(2) Demand at NFDS refers to the No Future Development Scenario. This considers future water demand assuming no additional development will occur. The identified percentage is the Basin Yield Metric.~~
 - ~~(3) Demand at 80% estimates water demand if development were allowed to occur until demand reaches 80 percent of the sustainable yield.
The supportable population represents the population that would be supportable with a water demand capped at 80 percent of the sustainable yield.~~

The Basin Management Committee may choose which combination of programs to implement, with modifications and potential additions through adaptive management based on monitoring results. The growth rate for new residential development shall be adjusted accordingly, per the requirements of Standard D2 in Section 7.3, so residential growth shall depend on Basin Plan program implementation and adaptive management.

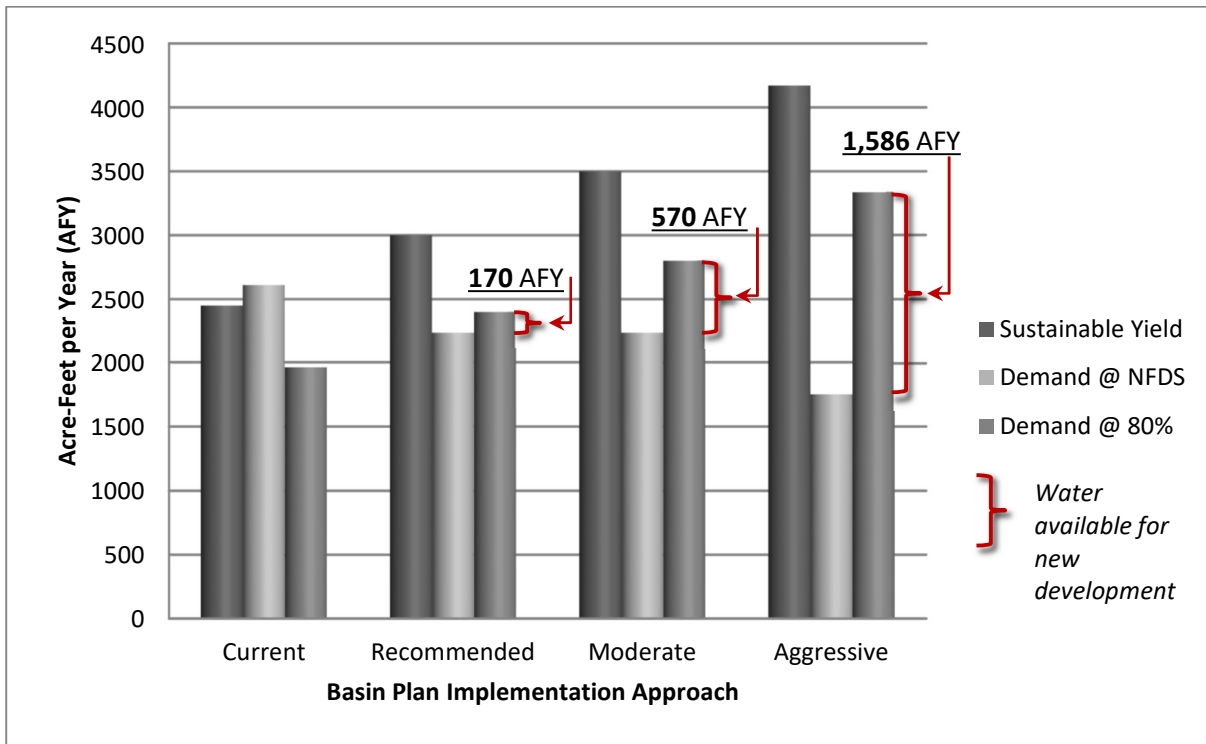
A 2013 study funded by the US EPA's Climate Ready Water Utilities Project determined that reduced precipitation would have the most significant effect on basin yield, compared to increased temperature and sea-level rise. The sea-level rise projections that CHG considered correspond with the 5% probability scenario appropriate for medium risk averse decisions per the 2018 California Ocean Protection Council (OPC) Sea-Level Rise Guidance. The study projected the basin yield may reduce to 2,325 AFY by 2050 due to climate change with basin infrastructure improvements in place. The planning horizon for the Los Osos Community Plan is 2040. If the programs needed to achieve buildout as identified in the Basin Plan are implemented by 2040, the climate change study estimates that keeping groundwater extraction within 80% of the estimated basin yield is enough buffer for the potential reduction in yield due to climate change.

~~Figure E-3, also illustrates the difference between the water demand and sustainable yield under different approaches to Basin Plan implementation. The water available for new development is represented by the difference between the NFDS demand and demand at the 80 percent Basin Yield Metric.~~

~~The programs recommended in the *Draft Basin Plan* can facilitate a future population of 16,220 while maintaining a Basin Yield Metric of 80 percent. This Community Plan, however, considers a buildout population of about 18,750 within the Los Osos Urban Reserve Line. To support that population and maintain the 80 percent metric, additional programs beyond those recommended by the *Draft Basin Plan* would need to be completed. Adding Infrastructure Program B to the recommendation could allow the basin (which has a somewhat greater buildout than the Urban Reserve Line alone) to accommodate a population of up to about 18,900.~~

~~The several components of demand should be closely monitored to ensure that expected water availability for urban use remains realistic. If necessary, general plan amendments should be initiated as needed to assure that the level of future development can be accommodated by the sustainable yield of the groundwater basin without seawater intrusion (see Chapter 4, Section 4.2, Land Use Policies).~~

Figure D-3: Comparison of Sustainable Yield and Demand



D.3 Sewage Disposal

[The Los Osos Water Recycling Facility \(LOWRF\) community sewer/recycled water system became operational in 2016. This facility allowed the community to move off of individual septic systems in the majority of the urban area, reducing the nitrate loading on the basin, and also providing tertiary-treated effluent to offset basin uses and recharge the basin, which is projected to push back the seawater intrusion front over time. Nearly 100% of the community within the sewer service area are now connected to the community wastewater system. As of April 2020, only 44 properties within the sewer service area remained to be connected to the sewer. The LOWRF was designed to treat up to 1.2 million gallons per day \(MGD\). Flows to the LOWRF in 2019 averaged about 480,000 gallons per day, with daily peaks of up to 540,000 gallons per day, 45% of design capacity. The LOWRF is anticipated to be able to accommodate buildout within its service area.](#)

[Outside of the sewer service area, the community relies on individual septic systems for sewage disposal. The County of San Luis Obispo Department of Planning & Building’s Onsite Wastewater Treatment Systems Local Agency Management Program \(LAMP\) establishes standards for new septic systems that may be permitted by the County. The LAMP is anticipated to be adopted by the Board of Supervisors in 2020 after review by the Regional Water Quality Control Board \(RWQCB\). The RWQCB retains permitting authority for the Bayview Heights and Martin Tracts at this time. The LAMP designates the Cabrillo Heights area as a severe nitrogen loading impact area subject to specific design criteria. The community of Los Osos is served by individual septic systems or small package treatment plants. A community sewer system is approved to serve much of the urban area and is currently under construction.](#)

[Los Osos currently relies solely on septic tanks for sewage disposal. According to the Regional Water Quality Control Board \(RWQCB\), percolation from septic tank leach fields is high in nitrates. As population has grown, nitrate levels in groundwater have gradually increased to the point](#)

where they have exceeded the State's maximum level allowable for drinking water in the upper aquifer. In response to this condition, the RWQCB established a prohibition zone in 1988 that covers much of the urban area, within which discharge from septic systems is not allowed, with limited exceptions:

The County of San Luis Obispo is currently building a community sewer system that will serve most of the area within the prohibition zone. It is intended to remedy the water quality problem identified by the RWQCB. An assessment district has already been approved by local voters to help fund the sewer project.

The sewer project includes construction and operation of a community sewer, including a treatment plant, collection/disposal/reuse facilities, and all associated development and infrastructure. The treatment plant site, known locally as the Giacomazzi site, is located outside of the Los Osos Urban Reserve Line on Los Osos Valley Road behind the Los Osos Mortuary and Memorial Park. Collection, disposal, and reuse infrastructure will be located throughout the community of Los Osos, with the primary effluent disposal leach field proposed for eight acres above Highland Drive at the site known as the Broderson site. The project will treat wastewater to a tertiary level, and will reuse as much of the treated effluent as possible for urban and agricultural irrigation. Disposal of effluent will be prioritized to reduce seawater intrusion and otherwise improve the health and sustainability of the underlying Los Osos Groundwater Basin. Besides meeting State water quality standards, the project is intended to provide several benefits, such as reducing seawater intrusion, minimizing septic tank discharge to the Morro Bay Estuary, recharging groundwater to increase the sustainable yield of the groundwater basin, and making recycled water available for irrigation.

The wastewater treatment plant is designed to have a capacity to treat an average daily dry weather flow of about 1.1 million gallons per day (mgd), as adjusted to account for a planned water conservation program. This capacity could serve a population of about 18,400 residents within the area to be served by the sewer system. That population closely corresponds to the estimated population of about 18,500 within the sewer service area at buildout under this plan, as the small difference in the two figures (less than 3 percent) is within the margin of error for such estimates. Therefore, as currently planned, the capacity of the sewer system could accommodate, but not exceed the needs of the projected future population within the sewer service area.

The County should continue to monitor the progress of the sewer project. If necessary, general plan amendments should be initiated as needed to assure that the level of future development can be accommodated by the capacity of the sewer system and the sustainable yield of the groundwater basin without seawater intrusion.

[This section will be updated as necessary, prior to the Public Hearing draft]

D.4 Schools

D.4.1. Current Capacity and Enrollment Trends

Los Osos is in the San Luis Coastal Unified School District. Residents attend two elementary schools (one elementary school has closed) and Los Osos Middle School, all located within the community, and Morro Bay High School. Typically, about 70 percent of students at the middle school and high school come from Los Osos. Elementary school enrollment has generally declined during the 1993-2014 period, and is currently about 72 percent of the capacity of the two remaining elementary schools. Los Osos Middle School enrollment was

about 94 percent of capacity in the 2013-2014 school year, while Morro Bay High School's enrollment was slightly under capacity.

D.4.2. Projected Enrollment

The projections used in this plan for Los Osos are based on a simplified version of current student generation rates and assume that those rates will remain constant in the future. At buildout under this plan, assuming a residential occupancy rate of 100 percent, about 176 elementary students, 37 middle school students and 70 high school students would be added, as shown in Table D-4. With those numbers of additional students, the current capacities of the elementary school, middle school and the high school would not be exceeded (not including enrollment changes in the middle and high schools generated from outside of Los Osos).

Table D-4: Capacity and Enrollment, Schools Serving Los Osos			
School	Capacity	Enrollment 2013/2014	Projected Additional Enrollment from Los Osos @ Buildout
2 Elementary Schools (total)	1220	687	+176
Los Osos Middle School	650	560	+37
Morro Bay High School	1000	825	+70

D.5 Parks

Los Osos has only one community park, the 6.2-acre Los Osos Community Park. In addition, Los Osos residents have convenient access to Montana de Oro State Park, El Chorro Regional Park, and other "special" recreation facilities, including Sweet Springs Nature Preserve, Elfin Forest Natural Area, Morro Bay State Park and Golf Course, and Los Osos Oaks State Reserve. Public school facilities augment the community's recreation facilities.

The County's Parks and Recreation Element indicate that a reasonable goal for the amount of parkland needed is a minimum of three acres of parkland per 1,000 people. Using this guideline, new parkland is needed for the current population of Los Osos.. In particular, Los Osos needs more opportunities for "active" recreation, such as ball fields, children's play equipment, recreation programs, etc.

The County should work with the community to develop sufficient parkland (neighborhood and community parks and recreation facilities) to accommodate the needs of existing and future populations. Proposed programs to provide more parks for Los Osos are discussed in Chapter 2, Community Plan Policies.

D.6 Fire Protection

Fire protection and emergency medical services are provided by Cal Fire/County Fire through an agreement with the Los Osos Community Services District (LOCSD). Fire and emergency medical services are provided well beyond the Urban Reserve Line.

For most calls within Los Osos, Cal Fire response times vary from four to seven minutes. The response times are within the performance standards as outlined in the Cal Fire/San Luis Obispo County Strategic Plan.

D.7 Police Protection

Los Osos relies on the County Sheriff and the California Highway Patrol for police services. The Sheriff's coast station is located in Los Osos. The Highway Patrol office is located near the California Boulevard-Highway 101 interchange in San Luis Obispo. Response times for the Sheriff's office vary, based on allocated personnel, existing resources, time and day of week and prioritized calls for law enforcement services. In 2014, the average response time for Los Osos was about 16.6 minutes, according to the County Sheriff's Office.

D.8 Libraries

The Los Osos Library is located at 2075 Palisades Avenue. Measures of service for public libraries have typically been expressed as the number of books or the amount of library floor space per capita. A 1962 study, still regarded as valid by library administrators, contains a guide for estimating the need for library services, based on a survey of libraries from across the country (see Table D-5 below).

Table D-5: Formulas for Library Facilities by Community Size		
Community Size	Book Stock (Volumes per capita)	Total Square Feet per Capita
Under 10,000	3.5 to 5	0.7 to 0.8
10,000 to 35,000	2.75 to 3	0.6 to 0.65

Source: Adapted from Practical Administration of Public Libraries, Wheeler & Goldhov, 1962

Table D-6 summarizes the adequacy of the existing library in Los Osos based on the above guidelines, and indicates facility needs at build-out. It is clear that the existing facility is seriously inadequate. A new 7,000 square-foot library building is planned in Los Osos.

Table D-6: Recommended Library Facilities, Los Osos						
	Building Square Feet		Book Stock (# of Volumes)		Recommended at Buildout	
	2014 Actual	2014 Desirable	2014 Actual	2014 Desirable	Building Square Feet	Book Stock
Los Osos	3976	8700-9400	38345	38500-42000	11250-12188	51563-56250

Increasing use of computers will provide greatly expanded opportunities for people to gain access to digitized information. Libraries can improve their level of service by providing patrons with links to the information network, in addition to increasing the amount of shelf space for book storage.

D.9 Human Services

All government offices providing counseling, mental health, welfare, family planning and other human services are located in the City of San Luis Obispo.

D.10 Drainage

Several street intersections and other locations in Los Osos experience localized flooding. Areas where flooding frequently occurs are shown in Figure D-4. Other drainage concerns are runoff of sediment and pollutants into Morro Bay, which is causing adverse effects on the estuary and wetlands.

Drainage issues have been studied in the Preliminary Engineering Evaluation, Los Osos/Baywood Park Community Drainage Project, County Service Area No. 9J, completed in April 1998. The study attributes drainage problems to a combination of rising groundwater levels, the existence of natural sumps, the paving of open space and subsequent reduction of the area available for storm water infiltration, and disruption of natural surface drainage patterns by urban development. Recommended solutions include the construction of storm drains and retention basins. An assessment district for drainage purposes was approved by Los Osos voters in 1998 to maintain existing drainage facilities.

Figure D-4: Areas of Localized Flooding

