

Sacramento Central Groundwater Authority
Groundwater Sustainability Agency

Groundwater Fee Study

DRAFT REPORT

April 2021

Acronyms

Ag-Res.....	agricultural-residential
CII.....	commercial, industrial, or institutional
DWR.....	California Department of Water Resources
GMP.....	Groundwater Management Plan
GSA.....	Groundwater Sustainability Agency
GSP.....	Groundwater Sustainability Plan
JPA.....	Joint Powers Agreement
Prop 218.....	Proposition 218
SASb.....	South American Subbasin
SCGA.....	Sacramento Central Groundwater Authority
SCWA Z13.....	Sacramento County Water Agency's Zone 13
SGMA.....	Sustainable Groundwater Management Act
SWRCB.....	State Water Resource Control Board

Introduction

The Sacramento Central Groundwater Authority (SCGA) Groundwater Sustainability Agency (GSA) retained HDR Engineering, Inc. to develop a groundwater fee study to support the implementation of the Groundwater Sustainability Plan (GSP) to meet the implementation requirements of the Sustainable Groundwater Management Act (SGMA) and perform associated groundwater management activities. The main objective of this study is to establish cost-based, equitable, and proportional groundwater fees for all parcels in the SCGA GSA service area. This report documents the process and technical analyses used to develop the groundwater fees.

Overview of the SCGA GSA Boundaries

The SCGA GSA manages the groundwater of approximately 70% of the South American Subbasin (SASb) as shown in Figure 1. In general, this includes the areas east of Interstate 5, south of the American River, north of the Cosumnes River, and west of the foothills. Management of the subbasin is a responsibility shared with other GSAs. Under a Memorandum of Understanding with Sacramento County, this study also provides the foundation for comparable fees in the Sacramento County GSA as shown in Figure 1.

Overview of SCGA

SCGA has existed since 2006. It was originally established to implement the Central Sacramento County Groundwater Management Plan. As required by SGMA, SCGA became the GSA for a large portion of SASb in 2016.

SCGA's board members represent a diverse range of stakeholder interests in the SASb, varying from agriculture to urban to parks and conservation landowners. The GSA service area lies entirely within the boundaries of the South American Subbasin.

The member organizations of SCGA, made up of 14 members¹, each represent a different customer class or water purveyor/utility service area.

- California American Water
- City of Elk Grove
- City of Folsom
- City of Rancho Cordova
- City of Sacramento
- County of Sacramento
- Florin Resource Conservation District/Elk Grove Water Service
- Golden State Water Company

¹ Due to recent boundary adjustments, the SCGA Board voted to amend its Joint Powers Agreement (JPA) by removing Omochumne-Hartnell Water District and Rancho Murietta Community Services District, reducing its membership to 14. Finalization of the JPA amendments are in the process of being submitted to the signatory agencies for approval.

- Sacramento Regional County Sanitation District
- Representative for Agricultural Interests
- Representative for Agricultural-Residential
- Representative for Commercial/Industrial Self Supplied
- Representative for Conservation Landowners
- Representative for Public Agencies Self-Supplied

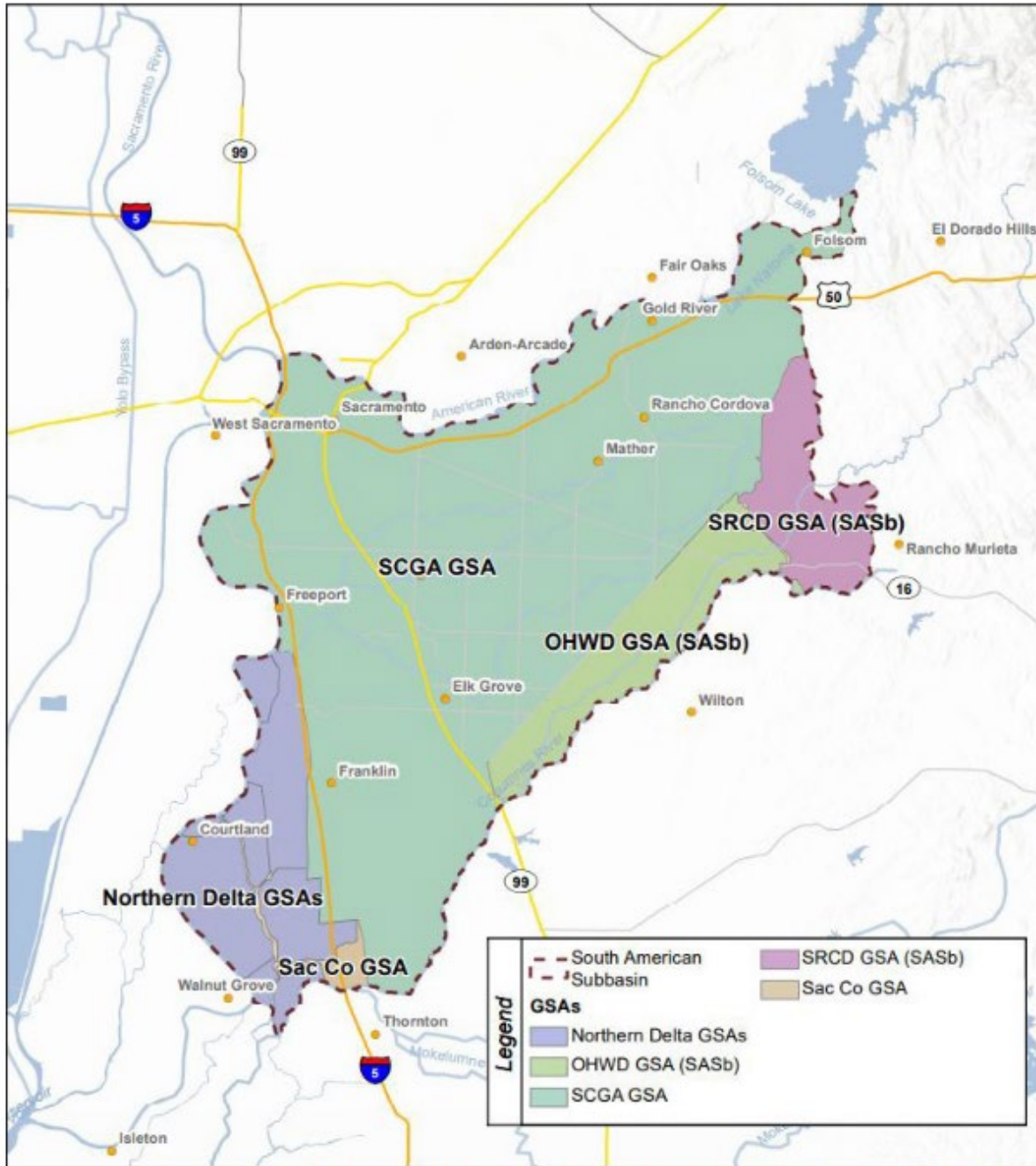
The SCGA is governed by a Board of Directors. The members of the Board are appointed by the cities of Sacramento, Folsom, Elk Grove and Rancho Cordova, and the Sacramento County Board of Supervisors.

As a part of the Board's duties and responsibilities, Article 2 of the SCGA Policies and Procedures Manual, provides that the Board shall *"establish assessments, fees, and/or charges sufficient to recover the costs of services provided by the Authority. Assessments, fees, and charges shall not exceed the reasonable cost of the services provided."* More specifically, the Board's duties and responsibilities specify that the Board *"shall review its assessments, fees, or charges annually, and shall modify such assessments, fees and charges consistent with the findings made in the Board's annual review."* Section 5.23 of the Rules of Procedure Governing the SCGA provides certain latitude in the development of the assessments, fees, and charges. Section 5.23 specifically states the following:

"§ 5.23 Adoption of Assessments, Fees and Charges for Water Costs

- (a) *The Board shall establish, approve, levy, and collect assessments, fees and/or charges for Water Costs incurred by the Authority. Consistent with applicable law and constitutional limitations, the Board may establish, as it deems appropriate, specific formulas, categories and/or rates applicable to such assessments, fees or charges.*
- (b) *Consistent with applicable law, constitutional limitations, and the Joint Powers Agreement, the Board may establish specific formulas, categories and/or rates for setting assessments, fees or charges necessary to create incentives and disincentives for the use or non-use of the groundwater resources within the boundaries of the Authority.*

While Section 5.23 appears to provide broad latitude in the development of the assessments, fees and/or charges, Article 2 clearly notes that the assessments, fees and/or charges shall not exceed the reasonable costs of the services provided. In the development of this study, HDR has developed groundwater fees based upon this core principle (requirement). Given the above, having HDR conduct this Groundwater Fee Study is consistent with the Board's duties and responsibilities.



Data Sources: DWR SGMA Data Viewer Available: <https://sgma.water.ca.gov/webgis/?appid=SGMADataViewer#boundaries>

Note: GSA boundaries subject to change

Figure 1. Map of the SCGA GSA

As can be seen in Figure 1, the SCGA GSA is the majority of the SASb. As a point of reference, this groundwater fee study only applies to the SCGA GSA. The exception to this is the Sacramento County GSA located in the southwest portion of the SASb. SCGA and the County are currently working on an agreement that will result in the County GSA parcels being included

in this groundwater fee study. In this way, the parcels within the County GSA may be billed in the same manner as parcels in the SCGA GSA. It is also important to note that the SCGA GSA boundaries, and groundwater fee study, includes several urban water purveyors, or water suppliers to a large majority of the parcels within the SCGA GSA. These include the cities of Sacramento, Folsom, Sacramento County Water Agency, Elk Grove Water District, California American Water Company, and Golden State Water Company. The parcels and groundwater use associated with these urban water purveyors are also a key component of this groundwater fee study.

Overview of the Existing SCGA Groundwater Charges

A key starting point in reviewing and updating SCGA's groundwater fees is to gain an understanding of the existing SCGA funding. Since 2006, SCGA has operated under a contribution methodology, which relies on voluntary funding from public and private water purveyors, land use agencies, the Sacramento Regional County Sanitation District, and Sacramento County Water Agency's Zone 13 (SCWA Z13).

The current contribution methodology has three components that are used to determine the contribution of the member agencies:

1. **Minimum Annual Charge** – The flat contribution is currently set at \$10,000 for JPA non-signatory members, and \$20,000 for JPA signatory members (i.e., land use agencies). This component is intended to reflect and collect the administrative and basic costs for SCGA operations.
2. **Per Connection Charge** – The per connection contribution is currently based on a unit cost of \$1.21 per water service connection multiplied by the number of water service accounts that lie within the SCGA groundwater basin, regardless of source of supply (e.g., surface water and/or groundwater). This component is intended to reflect and collect the administrative and recurring program costs incurred by SCGA.
3. **Groundwater Usage Charge** – The groundwater usage charge applies to those customers that consume groundwater, such as the urban water purveyors, agricultural, and agricultural-residential (Ag-Res) based on a unit cost of \$5.55 per acre-foot (AF) multiplied by the reported (or calculated) amount of groundwater use. Agricultural and Ag-Res contributions are paid through SCWA Z13 based on 25% of the total estimated groundwater use.

The Minimum Annual Charge and Per Connection Charge components, when taken together, pay for the "Base" portion of costs (e.g., administrative and recurring tasks). The Groundwater Usage Charge component pays for the Planned Efforts portion of costs (e.g., one-time costs associated with planning and project activities).

Overview of the Need for the Groundwater Fee Study

In September 2014, a three bill legislative package, collectively known as SGMA was signed into law. SGMA provides a framework for sustainable groundwater management and provides for the “management and use of groundwater in a manner that can be maintained during the planning and implementation horizon without causing undesirable results.”² SGMA requires governments and water agencies in high to medium priority basins to halt overdraft and bring groundwater basins into balanced levels of groundwater use and recharge. For SCGA, the passage of this law required the planning, implementation and development of a Groundwater Sustainability Plan (GSP) that includes projects and other management actions. This groundwater fee study is intended to address issues regarding the approach for a groundwater fee program following the adoption of SGMA and SCGA’s development of the GSP. Given the new regulatory requirements, SCGA’s Board determined that the current voluntary contribution approach will no longer be sufficient to reflect the programs and requirements of SCGA, as all agencies, parcels, and groundwater users who benefit from SCGA’s SGMA compliance efforts need to pay their equitable and proportional share of the costs associated with those efforts. Given that, the Board concluded the need to conduct a groundwater fee study to examine the existing methods of revenue generation and future funding for ongoing administrative and operating costs and SGMA compliance activities, such as GSP implementation, post January 2022.

Overview of the Approach and Methodology

The goal of this groundwater fee study is to establish cost-based, equitable, and proportional fees for all parcels in the SCGA GSA service area, and the adjoining Sacramento County GSA (see Figure 1). The groundwater fee study process includes the development of a projection of operating expenses, identifying the various customer types and classes of service, determining a method of allocating expenses, and developing the groundwater fee structure. At each step in the process, SCGA’s Board members provided input/feedback for the customers and stakeholders they each represent.

In determining the approach and methodology for the groundwater fee study, interviews were conducted with representatives of each customer class to provide feedback and input on the path forward. Based on discussions and feedback from the customer class meetings, SCGA members recognized that all parcels, regardless of groundwater usage or existence of a private well, benefit from SCGA’s governance activities (i.e., planning, implementation, monitoring) as the GSA. Maintaining a healthy and sustainable groundwater basin benefits all parcels in the area and protects groundwater resources for the long-term. Parcels reliant on groundwater are recognized as receiving the additional, direct, and indirect benefits of SCGA-related actions to

² California Department of Water Resources; <https://water.ca.gov/Programs/Groundwater-Management/SGMA-Groundwater-Management>

maintain groundwater sustainability and SGMA compliance for current use of groundwater resources.

Through this facilitation process and feedback, the Board established a preference for a “hybrid” approach. Under this approach, each customer class, and parcel within that customer class, will be billed a parcel fee and, if using groundwater in the subbasin, a groundwater usage fee. Key to this approach is that the urban water purveyors will be billed directly and pay SCGA directly for the parcels and groundwater usage for those located within the SCGA GSA. All other customers will be billed through the property tax rolls and those revenues generated will be distributed to SCGA.

The hybrid approach provides the method of billing all customers that benefit from SCGA’s efforts such that all parcels within SCGA’s GSA are assessed on a proportional and equitable basis. Those customers within the SCGA GSA boundaries that receive water service from an urban water purveyor represented on the SCGA Board will not be charged on the property tax rolls. These parcels represented by an active SCGA member public water purveyor or city utility are assessed indirectly through their representative purveyor through the water purveyors water rates. Only those parcels not provided water service by an active SCGA member agency public water purveyor or municipal utility are being directly assessed through the property tax rolls.

The methodology described in this report is the outcome of over two years of study effort working directly with customer class representatives (i.e., members of various customer classes) and the SCGA Board of Directors.

Development of the Technical Analysis

Given the discussion above, and the selection of the hybrid approach, HDR developed the technical analysis to develop the groundwater fees. Provided below is a discussion of the key steps in the technical analysis.

Development of Operating Expenses

SCGA adopted its GMP in 2006 and plans to continue operating under its basin management objectives and monitoring programs until the SGMA SASb GSP is adopted prior to the January 31, 2022 statutory deadline. Based on the schedule within the GSP, revenues generated from the proposed groundwater fee methodology collected through property assessments and urban water purveyor fees will only be applied towards SCGA GSA’s GSP implementation costs post January 2022. With the new State requirements to achieve SGMA compliance, in addition to meeting SCGA governance policies and practices, and GSP goals and objectives, SCGA identified future groundwater management actions and associated costs (i.e., projected operating expenses). Cost categories include: General Business, Recurring Business Activities and Fixed Assets, Regulatory Compliance, Current Fiscal Year Planned Action Items, and a Projected Action Plan (Moving Five-Year Plan). These cost categories are summarized below.

General Business – Ongoing tasks and actions for continued sustainable management of the SASb, including:

- Administrative Activities
- Acquiring and or Maintaining Fixed Assets, if any

Recurring Administration/Monitoring – Ongoing tasks to conduct monitoring and governance activities, including:

- Annual Monitoring and Data Management Activities
- Annual Financial Audits
- Board/Committee Meetings and Preparation
- Implementation of a Groundwater Accounting Program

Regulatory Requirements – Mandatory reporting activities to achieve SGMA compliance, including:

- SGMA Annual Reports (including Monitoring Data Analysis)
- GSP Implementation Actions
- GW Modeling

Planned Activities – Support the ongoing groundwater sustainability efforts, such as:

- SGMA report activities
- GSP implementation
- Groundwater modeling
- GSP evaluation and update

Although many of the SCGA's activities can be funded without complying with the legal requirements imposed by Proposition 218 (Prop 218), SCGA elected to follow the more inclusive and transparent requirements.

The timing of the completion of the groundwater fee study is critical. First, the study must be completed in sufficient time to submit and place the fees on the property tax roll such that it generates revenues before January 2022. At the same time, the study must be developed to be compliant with the Prop 218 hearing process. Given that the GSP will not be adopted until the end of 2021, a formally adopted GSP will not be available for the Prop 218 process. Given that, the basis for establishing the operating expenses for the first several years of the program were estimated. This included the estimated costs to complete the minimum monitoring and SGMA compliance activities (e.g., public outreach and annual reporting), and general administration and recurring costs based on the cost of conducting these activities under the GMP (pre-GSP). The targeted minimum budget, which will be refined as the process moves forward, has been set at approximately \$1.1 million as the basis of the development of the parcel and groundwater use fees. This minimum budget does not include projects and programs that may ultimately be included in the GSP. Provided in Table 1 is a summary of the projected operating expenses which provide the cost-basis for the proposed parcel and groundwater charges for the next four years.

Table 1. Summary of the Proposed Operations Expenses

	FY 22/23	FY 23/24	FY 24/25	FY 25/26
GENERAL BUSINESS				
Administrative, Accounting, IT	\$183,569	\$187,240	\$190,985	\$194,805
Fixed Assets (Equipment, Building, Computers, etc.)	795	811	827	844
Legal Counsel (non-project related)	46,375	47,303	48,249	49,214
Consultant/Contract Management	16,563	16,894	17,232	17,576
Total	\$247,302	\$252,247	\$257,292	\$262,438
RECURRING ADMIN/MONITORING TASKS				
SCGA Staff/Board Activities/Audits	\$171,783	\$175,218	\$178,723	\$182,297
Implement Real-Time Monitoring	17,978	18,338	18,704	19,078
CASGEM Monitoring and Related Coordination	61,413	62,641	63,894	65,172
Support and Evaluation of Banking and Recharge Projects	14,840	15,137	15,440	15,748
Total	\$266,014	\$271,334	\$276,761	\$282,296
REGULATORY REQUIREMENTS				
SGMA Report Activities (Data Analysis and Annual Report)	\$195,246	\$199,151	\$203,134	\$207,196
GSP Implementation	71,285	72,711	74,165	75,648
GW Modeling	69,315	70,701	72,115	73,558
Total	\$335,846	\$342,563	\$349,414	\$356,402
PLANNED ACTIVITIES				
Master Plan/GW Systems Infrastructure Plan	\$25,432	\$25,940	\$26,459	\$26,988
Budget Setup and Staffing Plan	6,952	7,091	7,233	7,378
Special Legal Services	22,383	22,831	23,288	23,753
JPA Revisions	8,298	8,464	8,633	8,806

Real Time Monitoring, Website Development	41,655	42,488	43,338	44,205
GW Accounting Program (GAP) Implementation	54,171	55,254	56,359	57,486
GSP Evaluation and Update	100,000	100,000	100,000	100,000
Total	\$258,891	\$262,069	\$265,310	\$268,617
Total Budget	\$1,108,053	\$1,128,213	\$1,148,778	\$1,169,753

As noted above, the estimated operating expenses contained in Table 1 provided the cost-basis for the development of the parcel fee and the groundwater usage fee for SCGA for the next four fiscal years. As SCGA continues to develop the GSP and develop additional specific needs, the budget will change and potentially increase which may require subsequent Prop 218 processes to adjust the charges. Similarly, the SCGA Board has the ability to set annual fees that are lower than the rate approved through the Proposition 218 process.

Development of Customer Classes of Service

Customer classes are used to recognize the differences in the billing approach due to challenges in estimating groundwater use. The objective is to group customers together into similar or homogeneous groups based on facility requirements and/or usage characteristics. Under the hybrid approach regardless of the amount of groundwater water use, the unit cost (fee) per acre-foot of groundwater use is the same for all customers and the per parcel fee is the same for all customers.

SCGA’s method for collecting revenues is dependent on the number of parcels and groundwater use within SCGA’s GSA boundaries, either as a customer of an urban water purveyor or as a parcel not served by an urban water purveyor. For those customers served by an active SCGA-member water purveyor or utility, they will be billed through the purveyor or utility water/utility bill, while other water users in the basin, such as self-supplied groundwater pumpers, and other urban parcels not connected to a member urban water purveyor or utility, will be charged through the property tax roll.

In developing the customer classes of service for the groundwater charge study, customer class definitions were refined as the study progressed. Under the proposed groundwater fee analysis, customer classes are described as follows:

1. **SCGA-Member Urban Water Purveyors/Utilities** will be sent an invoice which includes their proportionate total of the projected year’s expenses based on the purveyor’s number of customer parcels within the SCGA GSA service area, and the average of the five prior years’ groundwater use within the SCGA GSA service area. Essentially, the parcels in the water purveyor’s service area then pay for these costs through their water/utility bill. However, it is up to the water purveyor to determine how they will collect these costs from their customers.

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2. **Agricultural Residential (Ag-Res) Customers** are large domestic use parcels (generally 2 to 10 acres). Ag-Res customers are charged the parcel fee, and, as de-minimis users, a flat groundwater fee based on 2 acre-feet/year of groundwater use. The minimum charge for groundwater use is based on the SGMA reporting requirements and definition of a de-minimis use customer. At this time, SCGA does not have detailed data and information on overall well usage, complete and accurate information on which parcels have wells, or metering data on. This 2 acre-feet per year minimum use appears reasonable for the parcel sizes and land uses in this class. In addition, the level of administrative effort, and costs, related to determining precise, detailed Ag-Res groundwater use is prohibitive and would increase the costs of the program in return for a minimal improvement to accuracy. This customer class pays through an assessment on their individual parcel property taxes.
 3. **Agricultural Customers** are conducting agricultural business activities on larger acreage parcels (generally 10 acres or more). Agriculture customers pay the parcel fee and a groundwater use fee based on estimated groundwater use on a five-year rolling average. Groundwater use amounts are reduced by 25%, in other words, only 75% of the estimated groundwater use is included in the bill, to account for deep percolation of applied groundwater as a result of irrigation practices. A more detailed discussion of the analysis to support this approach is provided later in this report. This customer class pays through an assessment on their individual parcel property taxes. Agricultural parcels are billed the parcel charge plus a minimum 2 acre-feet/year where irrigation cannot be identified. As is the case with de-minimis ag-res users the level of administrative effort, and costs, related to determining groundwater use on these parcels more precisely is prohibitive and would increase the costs of the program in return for a minimal improvement to accuracy.
 4. **Urban Residential Customers** are those residential customers that are customers of a non-participating urban water purveyor. Given the urban/suburban setting of these customers, these customers will be charged the parcel fee, and a minimum groundwater fee based on 1 acre-feet/year. This level of groundwater use reflects the demographics of these urban residential customers. Urban residential customers will be billed through an assessment on their individual parcel property taxes.
 5. **Other Urban Customers** are all other commercial, industrial, or institutional (CII) use parcels, as well as open land with native vegetation that are not serviced by a SCGA-member water purveyor/utility, or are self-supplied using a private well, such as a large industrial complex, cemetery, golf course, or public park. Such parcels are charged the parcel fee, and a flat groundwater fee for 2 acre-feet/year as is the case of all de-minimis users. The minimum charge for groundwater use is based on the SGMA reporting requirements and definition of a de-minimis use customer. At this time, SCGA does not have detailed data and information on overall well usage, or if private wells are currently metered. This customer class is assessed through their property tax bill or, for property-tax-exempt agencies, via individual bills issued by SCGA.

To better understand the classes of service, Figures 2 and 3 show the distribution of total groundwater use compared to SCGA parcels in the GSA by customer class. While agricultural and ag-res water users pump more groundwater than the urban water suppliers, urban parcels make up a much larger percentage of parcels within the SCGA GSA boundaries.

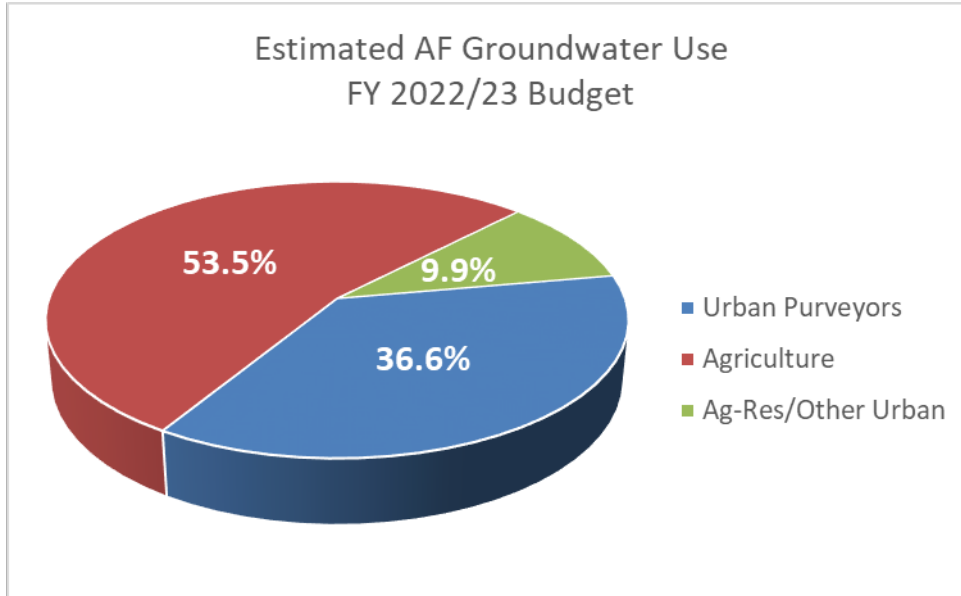


Figure 2. Groundwater Use Distribution by SCGA Customer Class

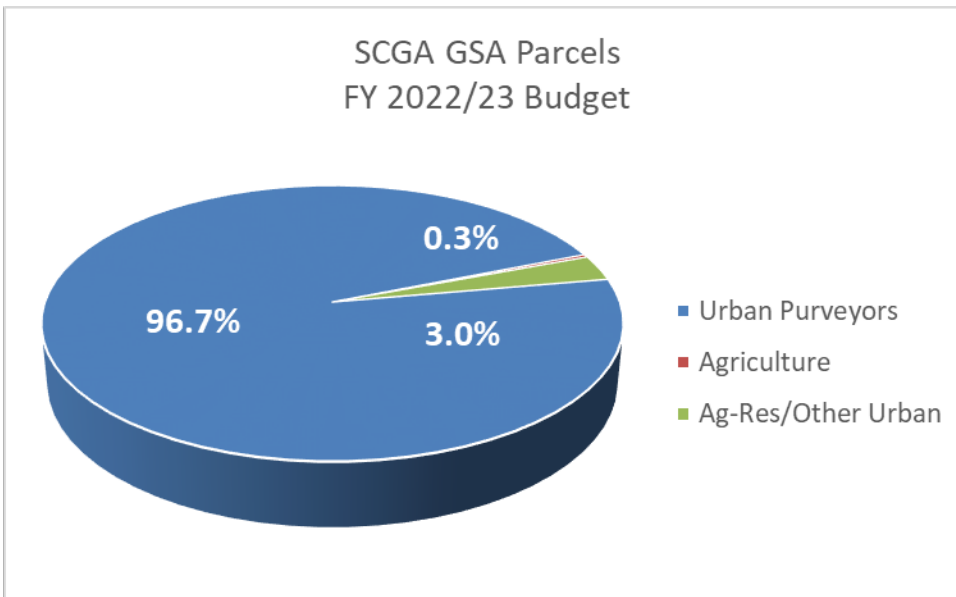


Figure 3. Distribution of Parcels in SCGA Boundaries by Customer Class

Method of Allocating Expenses

In order to develop the structure for the parcel and groundwater use fees for each customer class represented by SCGA, a method for equitably and proportionally allocating the costs must

be developed. The purpose of the operating expenses incurred by SCGA is to fund groundwater management activities to maintain a healthy groundwater subbasin. While the method for allocating expenses puts an emphasis on groundwater usage, it also considers the benefits of SCGA's management activities for all customers (i.e., parcels) in the GSA boundary. As a result, two allocation components were developed to allocate the portion of the SCGA GSA's costs. The first allocation method assigns costs which benefit All Customers, and the other allocation method includes only the portion of operating costs benefitting Groundwater Users. The All Customers component is reflected through a per parcel fee while the Groundwater Users component is collected through a groundwater usage fee.

To develop the allocation of costs between All Customers and Groundwater users, two approaches were utilized. The first approach for the allocation method is based on SCGA's historical allocation approach. SCGA's historical allocation approach reflects SCGA GSA's operations that existed before SGMA, and will continue. This component of the allocation method assigns the majority of the costs to All Customers as the costs to be allocated provide a benefit to all customers for general business (e.g., administrative costs) and recurring administration and monitoring based on SCGA's estimates of why these costs are incurred. In essence, these costs reflect the "fixed" costs that SCGA incurs as part of being a GSA. For example, costs associated with facilities or nonproject related legal charges, are a benefit to all customers regardless of groundwater use as a benefit from groundwater management. It should also be pointed out that these costs do not vary depending on the size of the parcel, given that they are a direct and equal benefit to all customers to provide the base functions of SCGA. In some instances, a portion of these base functions does provide a joint benefit to both all customers (per parcel) and groundwater use. As an example, SCGA Staff/Board Activities are allocated primarily to All Customers (per parcel) and a portion to Groundwater Users as a component of these costs are related to, or impacted by, the use of groundwater in the subbasin. In summary, this component of the cost allocation method is reflective of the funding approach prior to development of the GSP and represents the approximate allocation of benefits from groundwater governance activities that benefit each parcel in an equal manner.

The second approach for the allocation method applies to costs directly related to compliance with SGMA, and is based on the California Department of Water Resources (DWR) scoring criteria for Basin Prioritization which was used to determine that the SASb is a high priority groundwater subbasin requiring implementation of a SGMA-compliant GSP. DWR provides a scoring for various criteria or categories. Based on the scoring for each category, SCGA staff reviewed the criteria and basis for each category as being related to All Customers or Groundwater Users.

The allocation method extracts each of the criteria and associated point scores applied to the SASb and allocates score points attributed to the two Customer Groups (i.e., All Customers and Groundwater User Customers). For example, population in the groundwater subbasin is weighted towards the All Customers group (cost per parcel), whereas subbasin groundwater use is weighted towards the Groundwater Customer group (cost per AF groundwater usage). Provided below in Table 2 is a summary of the development of the allocation based on the DWR scoring approach.

Table 2. Overview of the DWR Scoring Criteria for Basin Prioritization

Ranking Component	Score	All Customer Users	Groundwater Users	Comment
C1 - Population	3	3	0	Not dependent on GW
C2 – Pop. Growth	4	4	0	Not dependent on GW
C3 – Public Supply Wells	4	0	4	Directly related to GW use
C4 – Total Wells	4	0	4	Directly related to GW use
C5 – Irrigated Acres	3	2	1	Somewhat dependent on GW use, but many other factors
C6 – Groundwater Reliance	3.5	0	3.5	Directly related to GW use
C7 - Impacts	2	.24	1.76	Declining water levels (GW), water quality (all)
C8 – Habitat and Other	2	2	0	Not dependent on GW
Total	25.5 - High	11.24	14.26	Total score results in High Priority Subbasin
		44%	56%	

Based upon the use of the DWR scoring criteria and basin prioritization, the result was an allocation method which assigned 44% to All Customer Users and 56% to Groundwater Users.

Given the two allocation methods discussed above, the next step of the process was to review each line item in the budget and allocate the specific cost (i.e., line item) between All Customer Users and Groundwater Users. The assignment of allocation methods for the operating costs were jointly reviewed and developed by HDR and SCGA staff and reviewed and discussed with the SCGA Board. In general, ongoing administration and monitoring costs were allocated based on the historical allocation approach (i.e., prior to SGMA and GSP), which assigns more costs to All Customer Users to reflect the fixed costs of SCGA that benefit all parcels at the same level. The projected costs related to SGMA implementation and GSP management actions were allocated based on the second allocation method which used the DWR scoring. This is the allocation approach summarized in Table 2 which leans more towards Groundwater Users, which is reflective of the purpose of SGMA required activities to manage the use of groundwater in the SASb. Provided below in Table 3 is a summary of the allocation approach between All Customer Users and Groundwater Users.

Table 3. Allocation Approach Summary

	All Customer Users	Groundwater Users
GENERAL BUSINESS		
Administrative, Accounting, IT	70.00%	30.00%
Fixed Assets (Equipment, Building, Computers, etc.)	100.00%	0.00%
Legal Counsel (non-project related)	100.00%	0.00%
Consultant/Contract Management	70.00%	30.00%
RECURRING ADMIN/MONITORING TASKS		
SCGA Staff/Board Activities/Audits	70.00%	30.00%
Implement Real-Time Monitoring	100.00%	0.00%
CASGEM Monitoring and Related Coordination	100.00%	0.00%
Support of Banking and Recharge Projects	44.00%	56.00%
REGULATORY REQUIREMENTS		
SGMA Report Activities (Data Analysis and Annual Report)	44.00%	56.00%
Groundwater Sustainability Plan Development	44.00%	56.00%
GSP Implementation	44.00%	56.00%
GW Modeling	44.00%	56.00%
PLANNED ACTIVITIES		
Master Plan/GW Systems Infrastructure Plan	44.00%	56.00%
Budget Setup and Staffing Plan	44.00%	56.00%
Special Legal Services	44.00%	56.00%
JPA Revisions	44.00%	56.00%
Real Time Monitoring, Website Development	44.00%	56.00%
GW Accounting Program (GAP) Implementation	44.00%	56.00%
GSP Evaluation and Update	44.00%	56.00%

As noted, costs directly related to SGMA compliance (annual reporting, etc.) were allocated between All Customer Users and Groundwater User using the DWR scoring criteria for Basin Prioritization (i.e., the second allocation method). This was done as these costs are incurred as a direct result of groundwater management and use. Costs currently incurred and prior to SGMA and GSP development were considered to be more related to the overall administration and thus a benefit to All Customer Users. It is important to note that this allocation approach and methodology was presented to the SCGA Board and budget sub-committee at several meetings to gain their feedback and input in the process.

Based on the above allocation approach, the total costs to be collected through the parcel charge and groundwater use charge can be developed. Table 4 provides a summary of the FY 2022/2023 allocated costs between the user categories of All Customer Users and Groundwater Users.

Table 4. Summary of the FY 22/23 Allocated Costs

	All Customer Users	Groundwater Users
GENERAL BUSINESS		
Administrative, Accounting, IT	\$128,498	\$55,071
Fixed Assets (Equipment, Building, Computers, etc.)	795	0
Legal Counsel (non-project related)	46,375	0
Consultant/Contract Management	11,594	4,969
RECURRING ADMIN/MONITORING TASKS		
SCGA Staff/Board Activities/Audits	120,248	\$51,535
Implement Real-Time Monitoring	17,978	0
CASGEM Monitoring and Related Coordination	61,413	0
Support of Banking and Recharge Projects	0	14,480
REGULATORY REQUIREMENTS		
SGMA Report Activities (Data Analysis and Annual Report)	85,908	109,338
GSP Implementation	31,365	39,920
GW Modeling	30,499	38,816
PLANNED ACTIVITIES		
Master Plan/GW Systems Infrastructure Plan	11,190	14,242
Budget Setup and Staffing Plan	3,059	3,893
Special Legal Services	9,849	12,535
JPA Revisions	3,651	4,647
Real Time Monitoring, Website Development	18,328	23,327
GW Accounting Program (GAP) Implementation	23,835	30,336
Capital Projects GSP Evaluation and Update	44,000	56,000
Total FY 22/23 Budget	\$648,585	\$59,467

The results of the allocation of costs shows that approximately \$650,000 of the total budgeted costs of approximately \$1.1 million are allocated to All Customer Users. These costs provide the cost-basis for the development of a per parcel charge within the SCGA GSA as they benefit all customers equally for administrative and groundwater management activities. The Groundwater User costs of approximately \$460,000 are allocated to groundwater users and are collected based on the calculated average groundwater use in the SCGA GSA. Given the allocation of these costs between All Customer Users and Groundwater Users, the final step of the study process is to develop a per parcel fee for all parcels and per acre foot fee for groundwater use.

Development of the Groundwater Fees

As noted, and based on the feedback provided by the SCGA Board, SCGA established the framework for a hybrid model in which urban parcels within an active member water purveyor or utility agency's service area pay through their water/utility bills and all other parcels pay through

an assessment on their individual parcel property taxes. The costs are equitably allocated and designed to provide a parcel fee (\$ per parcel) and a groundwater use fee (\$ per acre-foot).

The parcel fee is determined by dividing costs that benefit all customers in the GSA by the number of parcels in the GSA. It is important to understand that the charge per parcel is the same, regardless of parcel size (i.e., a flat per parcel charge). This is done as these costs are related to overall administration or otherwise provide all customers a benefit from groundwater management and shared equally among all parcels, and the costs do not vary based upon parcel size. Stated another way, these costs are considered to be a fixed cost and should be shared equally by all, as all customers benefit at the same level from overall administration and groundwater management.

In contrast to this, those costs that were related to supporting groundwater use were allocated to those customers (parcels) using volumes of groundwater use. This relationship reflects the variable nature of these costs as they are reflective of groundwater use and allocated to each customer using groundwater on an acre foot basis. However, calculating the groundwater usage and the groundwater usage charge does require making certain assumptions about groundwater use since not all groundwater use is metered. Given that, the following assumptions are made in acquiring groundwater usage data for the four Customer Classes (i.e., Urban, Ag-Res, Ag, and Other Urban Customer) to determine the groundwater usage charge:

1. SCGA-Member urban groundwater use is reported by the member agencies;
2. Ag-Res groundwater use is assumed to be de-minimis as defined in SGMA and set at (i.e., estimated at) 2 AF/year per parcel. This is reasonable because better data are not available, the cost to acquire improved data would be prohibitive, and this level of groundwater use is consistent with the SGMA definition for these types of customers;
3. Agricultural groundwater use is either self-reported based on voluntary metering or estimated per parcel based on SCGA's adopted method as described in the Davids Engineering Study completed in May 2014.
4. Urban Residential customers are based on one acre foot per parcel given the nature of the customer demographics. These are customers of non-participating urban water purveyors within the SCGA GSA.
5. Other Urban Customer groundwater use, including non-member urban and self-supplied CII parcel groundwater use, is also estimated based on two acre feet per parcel per year because better data is not currently available.

In developing the fees for ground water use. and specifically the amount of the groundwater use to develop the charges, a five-year average of groundwater use will be used for agriculture parcels to reduce year-to-year groundwater fee changes for agriculture customers due to changing crop patterns. Additionally, special consideration is given to looking at irrigation practices and the natural unavoidable return of a portion of applied groundwater to the aquifer system. Using the 2018 Integrated Water Flow Model Demand Calculator and SCGA's 2018 estimated agricultural groundwater use, SCGA evaluated the amount of applied groundwater that ends up as deep percolation as outlined in Table 5.

Table 5. Agricultural Customer Net Groundwater Use Assumptions

Land Use	Agricultural and Rural (Non-Delta) (acre-feet)		
	Applied Water	Deep Perc Applied Water	% Deep Perc
Field and Truck	11,192	3,520	31%
Pasture and Hay	59,372	19,809	33%
Rural Residential	21,028	9,146	43%
Vineyards and Orchards	23,535	6,022	26%
Total Irrigated Land Uses	115,127	38,497	33%

Source: 2018 IDC Model Report and Results

For purposes of the study, vineyards and orchards (using efficient irrigation methods) were used to arrive at a minimum assumption that approximately 25% of applied groundwater for agriculture ends up as deep percolation. This resulted in an assumption that agricultural customers would be charged for 75% of their five year average groundwater use to reflect this natural percolation. Domestic water use typically flows to a treatment plant and then to the River for downstream environmental uses and thus is assumed to generate only negligible groundwater recharge.

Under the allocation approach, 75% of the five year estimated average groundwater usage, and number of parcels within the GSA an annual parcel fee (\$/parcel) and groundwater use fee (\$/AF) were developed. The annual parcel charge is based on the total cost allocated to All Customers (Table 4) divided by the total parcels. Similarly, the total cost allocated to Groundwater Use in Table 4 is divided by the total acre feet of groundwater use based on the above discussed actual and estimated average use for FY 2022/23. The proposed fees for FY 2023/24 through FY 2025/26 are based on the same approach, with assumed inflationary increases in operating costs of 2.0% annually. Given the assumed parcels and groundwater use, the overall fees increase annually by approximately 2.0%. Provided in Table 6 is a summary of the proposed fee based on the projected expenses and the allocation approach outlined previously.

Table 6. Annual Parcel Fee and Groundwater Fee/AF

	Annual Parcel Fee (\$/Parcel/Year)	Groundwater Fee (\$/AF)
FY 2022/23	\$2.75	\$3.74
FY 2023/24	\$2.80	\$3.81
FY 2024/25	\$2.85	\$3.88
FY 2025/26	\$3.91	\$3.94

As noted, the costs allocated in each year to All Customer Users is divided by the total number of parcels in the GSA. In this case, the SCGA GSA and the County GSA. Taking the total allocated costs to All Customer Users for FY 2022/23 of \$648,585 and dividing by the total

number of parcels of 235,734 results in the FY 2022/23 annual parcel fee of \$2.75. This was done for each year through FY 2025/26 to calculate the per parcel charge. Again, this fee represents the “fixed” costs of supporting ongoing SCGA administration, management, and operations costs and is not impacted by changing levels of groundwater use or by the size of the parcel.

The same approach was taken for the Groundwater fee. The total allocated costs to Groundwater Users for FY 2022/23 of \$459,467 was divided by the total groundwater use in AF of 122,731 to calculate the FY 2022/23 groundwater fee of \$3.74/AF. Again, this was calculated for each year through FY 2025/26 based on the annual allocated costs to Groundwater Users. As a point of reference, the 122,731 AF reflects the metered groundwater use of the urban water purveyors, 2 AF per de-minimis user, and 75% of the estimated five-year average of the agriculture customers.

It is also important to understand that the parcel and groundwater fees are charged to all parcels within the SCGA GSA boundary, including the County GSA parcels, given the benefit of groundwater management that SCGA is providing to the GSA through the GSP and compliance with SGMA. However, as noted, the hybrid approach will bill each of the SCGA active water purveyors on a single bill/invoice that reflects the number of parcels in the SCGA GSA and metered groundwater use. All other parcels not served by an active SCGA member agency urban purveyor will be charged on the property tax rolls. As part of this program, an appeals process is being established by the Board to take into consideration any variance or changes in groundwater use not captured in the data provided through DWR sources or other assumptions.

Based on the above fees, the annual bill that will be levied on the property tax rolls can be developed. As noted, Ag-Res customers are billed the parcel fee and a groundwater fee based on 2 AF. This results in an annual property tax bill of \$10.23 ($\$2.75 + 2 \times \3.74) in FY 2022/23. Provided in Figure 4 is a summary of the projected Ag-Res annual bill through 2025/26.

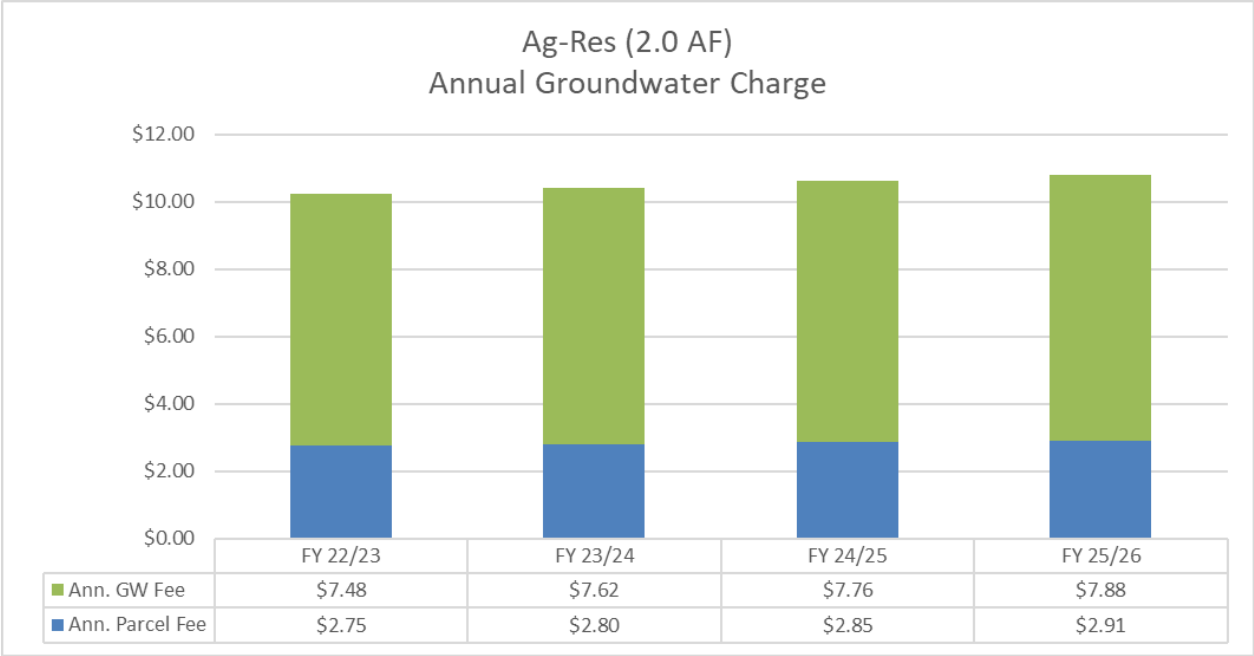


Figure 4.

The annual charge for agriculture customers is calculated on the amount of estimated groundwater use on a rolling five-year average at the groundwater charge (e.g., \$3.74 in FY 2022/23) plus a parcel charge. Given this, the annual groundwater charge will vary from year to year based on the charges implemented by the SCGA Board, and the five-year average estimated groundwater use. As a point of reference, the estimated groundwater use is based on water use by crop type and result in cost per irrigable acre of approximately \$10.00 annually.

Given the calculation of groundwater fee, both the groundwater use and parcel fee, the total revenue by customer class can be developed. Provided below in Figure 5 is the annual revenue distribution for the proposed revenues for FY 2022/23.

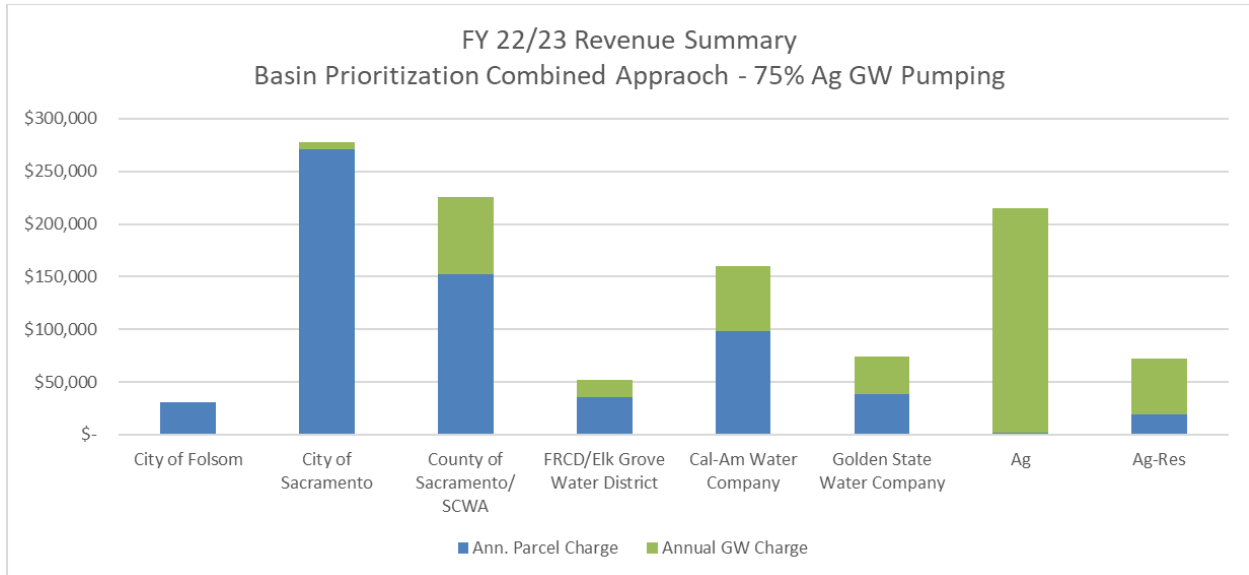


Figure 5. FY 2022/23 Annual Revenue Distribution by Customer Class

As shown in Figure 5, the parcel fee is the primary component of the urban water purveyor customer classes as they represent the vast majority of the parcels in the SCGA GSA and not all water use is provided through groundwater sources (e.g., supplemented with surface water). Conversely, the annual revenue for agriculture and Ag-Res customers is primarily related to groundwater use. This reflects the proportion of groundwater use of these two customers (see Figure 2). The total revenue, for each year, is based on the projected budget of SCGA.

State Intervention

Absent the development of the GSP and groundwater fee study, the State Water Resource Control Board (SWRCB) could step in to manage the subbasin. This will result in a set of fees that the State has outlined, and is provided in Figure 6.

Fee Category	Annual Fee Amount	Applicable Parties
Base Filing Fee	\$300 per well	All extractors required to report
Unmanaged Area Rate	\$10 per acre-foot, if metered	Extractors in unmanaged areas
	\$25 per acre-foot, if unmetered	
Probationary Basin Rate	\$40 per acre-foot	Extractors in probationary basins
Interim Plan Rate	\$55 per acre-foot	Extractors in probationary basins where the Board determines an interim plan is required.
De minimis Fee	\$100 per well	Parties that extract, for domestic purposes, two acre-feet or less per year from a probationary basin, If the Board decides the extractions will likely be significant.
Late Fee	25% of total fee amount per month late	Extractors that do not file reports by the due date.

Figure 6. State Intervention Fees

As can be seen in Figure 6, the State fees are substantially greater than those being proposed by SCGA. As a comparison for an Ag-Res customer, the State fees would include the base filing fee of \$300 and the de-minimis annual fee of \$100 for a total first year fee of \$400. This is compared to the proposed annual groundwater charge of less than \$10.

Summary of the Study

This report has been developed to summarize the approach used by SCGA to establish a groundwater fee program. The report provides the current budget estimates, rationale for incurring costs, number of parcels, and groundwater use to develop the charges as presented. A cost allocation approach was developed based on consultation with SCGA staff and Board. The allocation approach and resulting charges that reflect the specific characteristics of SCGA and the allocation method is designed to reflect SCGA's cost causation and provide equitable and proportional groundwater charges for SCGA GSA's various customers. As part of the SCGA Board fee program approach an administrative appeals process is being developed.