

DRAFT Introduction & Description of Plan Area Sections
Groundwater Sustainability Plan for
Santa Rosa Plain Groundwater Subbasin

****Notes to Reader:**

- Text in **Red** indicates information that will be modified based on future information and/or further described in subsequent sections of the GSP
- Text and Figures in this Draft reflect the basin boundaries proposed by the City of Sebastopol’s Jurisdictional Basin Boundary Modification Request, assuming approval by DWR

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1. Introduction

In 2014, the State of California enacted the Sustainable Groundwater Management Act (SGMA), ~~which that~~ substantially changes the way groundwater is managed in California. This new law requires that groundwater basins and subbasins in California designated as medium or high priority under SGMA be managed sustainably. ~~To s~~Satisfying the requirements of SGMA, ~~generally involves four basic activities that must be completed by~~ local agencies must do the following:

- 1) Forming one or more Groundwater Sustainability Agency (GSA) to fully cover the SGMA high or medium priority basin/subbasin
- 2) Developing one or multiple Groundwater Sustainability Plans (GSPs) that fully covers the SGMA high or medium priority basin/subbasin
- 3) Implementing the GSP and managing to achieve quantifiable objectives and sustainability within 20 years of GSP adoption
- 4) Regularly reporting data and GSP progress to the California Department of Water Resources (DWR)

The Santa Rosa Plain Groundwater Subbasin (Subbasin), designated as basin number 1-55.01 in DWR's Bulletin No. 118, is prioritized as a medium/high priority basin by DWR and is, therefore, required to comply with SGMA.

1.1. Purpose of GSP

The purpose of this document is to fulfill the GSP requirement and present a path for sustaining groundwater resources in the Santa Rosa Plain Subbasin. Primary objectives addressed by this GSP are to:

- Meet requirements of SGMA and DWR's GSP Emergency Regulations (GSP Regulations) by establishing criteria and management actions that will achieve and maintain sustainable groundwater management in the Subbasin within 20 years of GSP adoption.
- Incorporate the best available scientific and technical information by building on the strong technical foundation established through previous technical studies and voluntary groundwater management activities in the Santa Rosa Plain.
- Integrate the perspectives and interests of the many diverse users and uses of groundwater resources within the basin through a process that provides opportunity for significant public and community engagement.
- Leverage the limited available funding and local resources through continued regional coordination and information sharing with other local entities and GSAs.

The development of this GSP benefits from a recent history of collaborative groundwater management and water resource planning by local stakeholders, which focused on addressing groundwater sustainability issues in the Subbasin prior to the passage of SGMA.

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1.2. Administrative Information

Santa Rosa Plain GSA

The Santa Rosa Plain GSA was formed to meet SGMA requirements in June 2017. The jurisdictional area of the Santa Rosa Plain GSA is the entire Santa Rosa Plain Subbasin and no other GSAs have jurisdiction within the Subbasin. The Santa Rosa Plain GSA formed through a Joint Exercise of Powers Agreement (JPA) entered into by the Cities of Cotati, Rohnert Park, Santa Rosa, and Town of Windsor, Gold Ridge Resource Conservation District, Sonoma County, Sonoma County Water Agency (Sonoma Water), Sonoma Resource Conservation District (RCD), and an organized group of Mutual Water & Public Utilities Commission-Regulated Companies (Independent Water Systems), in accordance with requirements of California Water Code Section 10723 for establishing groundwater sustainability agencies under SGMA. A copy of the resolution forming the JPA is included in Appendix A.

The Santa Rosa Plain GSA is governed by nine board members and alternates from the nine-member organizations, which each appoint one member and one alternate member. GSA Board members are elected or appointed members of their governing bodies who serve at the pleasure of the member organization appointing them. GSA Board members annually elect the officers of the Board for one-year terms, which may be extended to multiple consecutive terms. The GSA Board role in the GSP development process is to provide guidance and direction on key components of the GSP and consider recommendations from the GSA Advisory Committee and input from the public. The GSA Board is responsible for adopting the GSP and authorizing its submission to DWR.

The Santa Rosa Plain GSA has a service agreement with Sonoma Water for technical support, public outreach and community engagement, and grant writing and management. The GSA also has service agreements with outside firms for administrative support, legal, financial decision-making, and facilitation services for advisory committee meetings.

Santa Rosa Plain GSA Advisory Committee

The Santa Rosa Plain GSA formed an Advisory Committee of 18 members in October 2017 consisting of ~~appointment~~ members ~~from appointed by each of~~ the nine-member agencies, ~~the City of Sebastopol and the Federated Indians of Graton Rancheria, with and~~ ~~nine~~ ~~seven~~ interest-based members appointed by the Santa Rosa Plain GSA Board:

- 2 - Environmental (from organizations with a presence in the Basin)
- 2- Rural residential well owner
- 1 - Business community
- 2 - Agricultural
- ~~1 - Federated Indians of Graton Rancheria~~
- ~~1 - City of Sebastopol~~

131 The role of the Advisory Committee in the GSP development process is to work towards
132 consensus and incorporate community and stakeholder interests into recommendations to
133 the GSA Board on GSP development and SGMA implementation. Advisory Committee
134 members also report to, and seek input, from their larger constituency groups on key
135 components and proposals related to GSP development. The Advisory Committee makes
136 written recommendations to the GSA Board that reflect the outcome of Committee
137 discussions. To ensure that all viewpoints are heard and considered by the GSA Board,
138 Advisory Committee reports to the GSA Board identify areas of agreement and
139 disagreement among the Advisory Committee, where applicable.

140

141 GSA Coordination

142 Implementation of SGMA in the Santa Rosa Plain Subbasin is closely coordinated with
143 neighboring GSAs in Petaluma Valley and Sonoma Valley, as well as local agencies with land
144 use responsibilities including the Cities of Cotati, Rohnert Park, Santa Rosa, Sebastopol,
145 Town of Windsor, and the County of Sonoma. In addition to closely coordinating on
146 managing and monitoring along shared basin boundaries, resources are leveraged and
147 shared by the three existing GSAs in Sonoma County to maximize efficiencies, including
148 shared templates and methodologies for certain GSP components, outreach resources,
149 grant opportunities, and the development of data management system tools and
150 technologies.

151

152 Contact information for the Santa Rosa Plain GSA is:

153

154 Santa Rosa Plain Groundwater Sustainability Agency
155 404 Aviation Boulevard, Santa Rosa California 95403
156 www.santarosaplainingroundwater.org (707) 524-8378

157

158 GSA Administrator: Andy Rodgers, West Yost Associates, Inc.

159

160 GSA Plan Manager: Jay Jasperse, Chief Engineer and Director of Groundwater Management,
161 Sonoma County Water Agency

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2.0 Description of Plan Area (Reg. 354.8 b)

This section provides a description of the Plan Area, including the Subbasin’s general physical setting and jurisdictional areas, topography and surface water features, land use characteristics, water source types and uses, existing monitoring and management programs, applicable land use plans, and the well permitting process. The numbers in parenthesis in each sub-heading indicate the applicable SGMA regulation.

2.1 General Setting and Jurisdictional Areas (Reg. 354.8 b)

The Plan Area for this GSP is the entire 80,000-acre Santa Rosa Plain Subbasin, which lies within the Coast Ranges geomorphic province and is one of three coastal alluvial subbasins of the Santa Rosa Valley Groundwater Basin in North Coast Hydrologic Region. It is generally bounded on the west by low lying hills of the Mendocino Range and on the east by the Sonoma Mountains and Mayacamas Mountains. As shown on **Figure 2-1**, the Subbasin is approximately 22 miles long and the width varies from approximately 9 miles through the Santa Rosa area to 6 miles wide at the south end of the valley near the City of Cotati and narrows greatly at its northern end. The approximately 80,000-acre Subbasin includes the Town of Windsor, Cities of Cotati, Rohnert Park, and Santa Rosa, and the City of Sebastopol and areas of unincorporated rural communities and agricultural cultivation. As shown in **Figure 2-2**, the principal streams in the Subbasin are Mark West Creek, Santa Rosa Creek, and Laguna de Santa Rosa, which drain a combined watershed area of approximately 251 square miles.

Neighboring groundwater basins and subbasins are also shown on **Figure 2-1** and include the very low/~~medium(?)~~ priority Healdsburg Area Subbasin (designated as basin 1-55.02 by DWR) to the north, the **very low/medium(?)** priority Wilson Grove Formation Highlands Basin (designated as basin 1-059 by DWR) to the west, and the **medium/high(?)** priority Petaluma Valley Subbasin (designated as basin 2-001 by DWR) to the south. The very low/~~medium(?)~~ priority Alexander Area Subbasin (designated as basin 1-054.01 by DWR) and the very low priority Rincon Valley Subbasin (designated as basin 1-054.03 by DWR) both abut a small eastern segments of [the](#) Santa Rosa Plain Subbasin boundary. The only neighboring GSA is the Petaluma Valley GSA, which formed in June 2017 and is responsible for implementing SGMA in the Petaluma Valley Basin. **DWR’s 2018 Draft Basin Prioritization proposes a change in priority from very low to medium for the Healdsburg Area Subbasin, Alexander Area Subbasin, and Wilson Grove Formation Highlands Basin.**

Available technical information related to the hydrologic connection between the Santa Rosa Plain Subbasin and adjacent basins and subbasins is included in **Section 3 (Basin Setting)** and provisions for coordinating with applicable GSAs and other local agencies within neighboring basins are described in **Section 7 (Implementation Plan)**.

While the Plan Area and jurisdiction of the Santa Rosa Plain GSA is limited to the [Santa Rosa Plain](#) Bulletin 118 Subbasin, technical studies (including monitoring and groundwater

211 flow modeling) indicate that contributing watershed areas outside of the Bulletin 118
212 Subbasin are hydrologically connected and represent important sources of inflow (both in
213 the form of surface streamflows and subsurface inflows) to the Bulletin 118 Subbasin. In
214 recognition of the hydrologic connection with the contributing watershed areas, available
215 data and information from these areas are also included in this GSP. The contributing
216 watershed area is also shown on **Figure 2-1** and is a modified version of the Laguna-Mark
217 West Watershed that extends slightly outside of the watershed in order to encompass the
218 entire Bulletin 118 Santa Rosa Plain Subbasin at the northernmost boundary and a portion
219 of the western boundary around the City of Sebastopol. Distinctions between metrics and
220 features associated with the Bulletin 118 Santa Rosa Plain Subbasin [jurisdictional area of](#)
221 [the GSA](#), and contributing watershed areas are clearly indicated or displayed in relevant
222 sections and figures.

223
224 Local agencies with jurisdiction within the Subbasin include the Santa Rosa Plain GSA,
225 Cities of Cotati, Rohnert Park, Santa Rosa, and Sebastopol, Town of Windsor, Gold Ridge
226 RCD, Sonoma RCD, Sonoma Water, and County of Sonoma. **Figure 2-3** shows the
227 jurisdictional boundaries of these local agencies, state, federal and tribal lands, and
228 protected lands within the Subbasin. State lands include Sonoma State University within
229 the Subbasin and several state parks and preserves located within the contributing
230 watershed area. Tribal lands include lands owned by the Federated Indians of Graton
231 Rancheria located within the Subbasin and west of Rohnert Park. Protected lands shown
232 on **Figure 2-3** include city parks and fields, county regional parks and preserves, special
233 district properties and preserves, state parks and preserves, and non-profit preserves.
234 There are no federally-owned lands within the Subbasin or contributing watershed.

235 **2.2 General Plan and Related Plan Land Use Categories**

236
237
238 Existing city and county planning activities that are directly or indirectly linked with water
239 supply and groundwater management include general plans and specific plans, in addition
240 to the UWMPs described above. Under SGMA, cities and counties retain their land use
241 authorities, however in recognizing the linkages between land use and water management,
242 SGMA does require increased coordination between land use planners and GSAs. At a
243 minimum, cities and counties must now refer proposed general plan changes to GSAs, and
244 similarly GSPs must take into account “the most recent planning assumptions stated in
245 local general plans of jurisdictions overlying the basin” (CWC §10726.9).

246
247 The Cities of Cotati, Rohnert Park, Santa Rosa, Town of Windsor and Sonoma County
248 general plans and specific plans provide growth estimates that are used in the UWMPs and
249 in this GSP to project future water demands and are incorporated into the sustainable
250 management criteria and metrics, including measurable objectives and interim milestones,
251 the sustainability goal, proposed projects and management actions. Projections of future
252 groundwater availability and planned projects and actions needed for sustaining
253 groundwater resources in the Subbasin will be shared with city and county planners for
254 incorporation into their respective land-use planning and decision-making.

255

256 In addition to coordinating on activities within the Subbasin, coordination and information
257 sharing between the GSA and land use planning agencies will be needed for the
258 contributing watershed areas located outside of the GSA’s jurisdiction. These areas
259 primarily fall within the purview of the County General Plan.
260

261 General Plans
262

263 Counties and cities are required to develop and adopt comprehensive general plans to
264 guide future local physical development, as required in California State
265 Government Code Title 7, Division 1, Article 5, Section 65300 et seq. Each general plan
266 must contain a statement of policies, including maps or diagrams and text, setting forth
267 objectives, principles, standards and plan proposals. City general plans are focused on
268 providing guidance on growth and development in the urban setting, while the county
269 general plan focuses on the unincorporated areas of the county. Developing and updating
270 general plans involves significant community involvement through workshops, hearings,
271 and public review of draft plans and policies.
272

273 The seven mandatory elements of a general plan are Land Use, Circulation, Housing,
274 Conservation, Open Space, Noise and Safety, although the degree of specificity and level of
275 detail varies dependent upon local circumstances and programmatic needs. The
276 Conservation element of the general plan is typically where water resources are addressed,
277 although other water related topics may also be addressed in other elements.
278

279 Land use elements must reflect the content of the other general plan elements and must
280 account for “rivers, creeks, streams, flood corridors, riparian habitats, and land that may
281 accommodate floodwater for purposes of groundwater recharge and stormwater
282 management...” as identified in the conservation element (Gov. Code § 65302(d)(3)). Land
283 use elements must designate the type and density of land uses within the jurisdictional
284 boundaries of the General Plan. The housing elements must be updated on a five-year cycle
285 to correspond with state regional housing needs allocations (Gov. Code § 65584 (b)).
286

287 The Santa Rosa Plain Subbasin includes areas covered by the County of Sonoma’s general
288 plan and the Cities of Cotati, Rohnert Park, Santa Rosa, Sebastopol and Town of Windsor
289 general plans.
290

291 *Sonoma County General Plan 2020*

292 In recognition of the importance of water resources within unincorporated areas of the
293 county, an optional, new Water Resource Element (WRE) was developed and included in
294 the Sonoma County General Plan 2020. The main purpose of the Water Resources Element
295 is to ensure that Sonoma County’s water resources are sustained and protected. To achieve
296 this main purpose, the Water Resources Element states that water resource management
297 should consider the amount of quality water that can be used without exceeding the
298 replenishment rates over time or causing long term declines or degradation in available
299 surface water or groundwater resources.
300

301 The Water Resources Element includes goals, objectives and policies for water quality,
302 groundwater, public water systems, conservation & reuse, importing & exporting, and
303 watershed management. These goals, objectives and policies include supporting local
304 groundwater studies and management programs, encouraging activities that protect
305 natural groundwater recharge areas. The Water Resources Element for the Sonoma County
306 General Plan 2020 can be reviewed at [http://www.sonoma-](http://www.sonoma-county.org/prmd/gp2020/wre.pdf)
307 [county.org/prmd/gp2020/wre.pdf](http://www.sonoma-county.org/prmd/gp2020/wre.pdf).

308
309 The Water Resources Element goals related to groundwater include:

- 310 • Protect, restore, and enhance the quality of surface and groundwater resources to
311 meet the needs of all reasonable beneficial uses.
- 312 • Manage groundwater as a valuable and limited shared resource.
- 313 • Assure that new proposals for surface and groundwater imports and exports are
314 consistent with Sonoma County’s ability to sustain an adequate supply of high-
315 quality water for all its water uses and dependent natural resources.
- 316 • Improve understanding, valuation and sound management of the water resources in
317 Sonoma County’s diverse watersheds.

318
319 Other water related topics incorporated in the Sonoma County General Plan 2020 include
320 water availability as a factor in Land Use Map densities that is addressed in the Land Use
321 Element. Land use designations based on the County’s General Plan 2020 are shown on
322 **Figure 2-8**. The Open Space and Resource Conservation Element addresses riparian
323 corridors, wetlands, wildlife protection, tree protection, fishery resources and other biotic
324 resources, water-oriented recreation, soil erosion, forestry, and mineral resources. The
325 Public Facilities and Services Element addresses connections to public water systems. The
326 Public Safety Element addresses flood hazards, fire suppression, and hazardous materials.
327 The County’s General Plan 2020 also includes a policy for the designation of community
328 separators, which are rural open space and agricultural and resource lands that separate
329 cities and other communities, prevent sprawl, protect natural resources, and provide city
330 and community identity by providing visual relief from continuous urbanization. The
331 process for updating the Sonoma County General Plan 2020 is planned to begin in 2019.

332
333 *Municipal General Plans*

334 City General Plans guide growth and development in the urban community, and typically
335 involve an urban growth boundary. The UWMPs and General Plans are clearly linked:
336 UWMPs calculate future water demand based on growth and development projected in the
337 General Plan.

338
339 City of Cotati – General Plan Update 2015

340 City of Rohnert Park – General Plan Update 2000 – update in process

341 City of Santa Rosa – General Plan 2035 Update 2009

342 Town of Windsor – General Plan 2040

343 City of Sebastopol – General Plan Update 2016

344

345 The Cities of Cotati, Rohnert Park, Santa Rosa, Sebastopol, and Town of Windsor General

346 Plan documents contain Community Development, Environmental Resources, Local
347 Economy, Circulation, Public Safety, Noise and Housing Elements. Each element contains
348 goals, policies and implementation measures that set a course for future land use in the
349 city. Goals summarize how development and future growth should be directed to achieve
350 the general plan vision by identifying physical, economic and/or social ends that the
351 community wishes to achieve.

352
353 [Additional information on groundwater-related goals and policies from municipal general
354 plans will be added here](#)

355 Specific Area Plans

356
357
358 Specific area plans are planning documents that guide the development of a particular
359 geographic area within the county. Any new developments or subdivisions within the
360 defined area must be consistent with the general plan and specific plan.

361

362

363 **2.22.3 General Land Use Characteristics (Reg. 354.8 b)**

364

365 Land uses within the Subbasin are shown on **Figures 2-4, a, b, and c**. Existing land use
366 conditions correlate most closely with the 2012 land use survey (**Figure 2-4b**), which
367 indicates the Subbasin is primarily comprised of urban, residential, commercial and
368 industrial land uses (36 percent) and native vegetation or water (35%) with irrigated and
369 non-irrigated agriculture making up approximately 26 percent of the land uses. The major
370 urban and residential areas in the Subbasin include the cities of Cotati, Rohnert Park, Santa
371 Rosa, Sebastopol, Town of Windsor, several unincorporated communities, and areas of
372 rural and semi-rural residential development.

373

374 Land use mapping over the past several decades provides a measure of growth and land
375 use changes in the Subbasin, which includes increases in residential and commercial land
376 uses and irrigated agriculture and a resulting decrease in native vegetation or water (**Table
377 2-1 and Figure 2-4a and b**). **Figure 2-4c** presents more detailed classification of
378 vegetation types within the Subbasin and contributing watershed areas from the Sonoma
379 County LiDAR and Vegetation Mapping Program.

380

381

382

383

384 **2.32.4 Water Source Types and Water Use Sectors (Reg. 354.8 b)**

385

386 This GSP recognizes that the efficient use and conjunctive management of the various
387 available water sources is integral to achieving sustainable groundwater management in
388 the Subbasin. The Subbasin has four primary water source types: groundwater, imported
389 surface water, local surface water, and recycled water. An overview of the spatial
390 distribution of the reliance on the four primary water source types by primary water use

391 sectors in the Subbasin is shown on **Figure 2-5** and provided below. Additional details on
392 water uses associated with the Subbasin water budget are described in **Section 3 (Basin**
393 **Setting)** and additional information on the availability and feasibility for future uses is
394 included in **Section 6 (Projects and Actions)**.
395

396 Groundwater

397 Groundwater resources represent an important and often only source of water supply for
398 many communities and water users in the Subbasin. **Figure 2-6** presents a map showing
399 the approximate location and density of water wells within the Subbasin and contributing
400 watershed areas, based on available data from DWR (**note to reader: this map will be**
401 **updated and refined with local information from Permit Sonoma and other well databases**).
402 These groundwater resources are relied upon to varying degrees by rural and urban
403 residents, vineyards and wineries, dairies, and other businesses and also support
404 streamflows and ecosystems present in the Subbasin. Groundwater sourced from water
405 wells within the Subbasin represents the primary water supply for irrigated agriculture
406 (where access to recycled water is not available), rural residential properties (including
407 many mutual water companies), commercial and industrial users in unincorporated areas,
408 and the City of Sebastopol. Local groundwater represents an important supplemental or
409 backup source of supply for many of the municipal water purveyors, including Sonoma
410 Water, the Cities of Santa Rosa, Rohnert Park, and Cotati, and California American Water's
411 Larkfield District which operate municipal wellfields within the Subbasin and contributing
412 watershed areas.
413

414 Imported Surface Water

415 Imported water consists of Russian River surface water sourced from ~~the~~ Sonoma Water's
416 production facilities located outside of the Subbasin and contributing watershed areas near
417 Forestville that is delivered via aqueduct to the cities within the Subbasin. The imported
418 Russian River surface water originates from storage in Lake Mendocino and Lake Sonoma,
419 which is controlled and influenced by a variety of agreements and decisions, including
420 water rights permits and a biological opinion that establish minimum instream flow
421 requirements for fish and wildlife protection and recreation. Imported water represents
422 the primary source of water for urban residents and businesses that are served by the
423 cities of Cotati, Rohnert Park, Santa Rosa, and Town of Windsor.
424

425 Local Surface Water

426 Local surface water from Mark West Creek, Santa Rosa Creek, and Laguna de Santa Rosa
427 and their tributaries represents an important source of supply for some water users.
428 Information on the approximate amounts of surface water is available through reported
429 surface water diversions filed with the California State Water Resources Control Board.
430

431

432 Recycled Water

433 Recycled water is treated to tertiary standards and by wastewater treatment plants
434 operated by provided by the Town of Windsor, and the City of Santa Rosa, and Airport
435

436 ~~Larkfield's Laguna Treatment Plant, and the Airport Larkfield Wastewater Treatment Plant~~
437 ~~and which~~ is used for crop and landscape irrigation in lieu of using groundwater or
438 imported water. Recycled water is ~~relied upon for agricultural purposes~~ used to irrigate
439 vineyards, dairies, and pasturelands, as well as landscaped parks, commercial properties,
440 schools and golf courses. ~~A significant portion of the total~~ Recycled water produced from
441 Laguna Treatment Plant ~~and the Town of Windsor's Wastewater Treatment Facility~~ is also
442 delivered for energy generation to the Geysers Geothermal Steamfield located in the
443 Mayacamas Mountains outside of the Subbasin and contributing water shed areas.

444 **2.42.5 Existing Monitoring Programs and Networks (Reg. 354.8 c, d, e)**

447 Existing monitoring programs and networks within the Subbasin have been developed and
448 implemented by many agencies, organizations and volunteers for a variety of purposes.
449 This section provides a description of the existing monitoring programs and networks. An
450 assessment of the existing monitoring networks and programs for their suitability to
451 comply with DWR's GSP Regulations, including identification of data gaps, is described in
452 **Section 5 of this GSP (Proposed Monitoring Program)**.

453 Groundwater Level Monitoring

454 Numerous organizations within the Subbasin and contributing watershed areas collect
455 groundwater-level measurements, including: DWR, Sonoma Water, the Sonoma and Gold
456 Ridge RCDs, the cities of Cotati, Rohnert Park, Santa Rosa, Town of Windsor, Sonoma State
457 University and many operators of small mutual water systems. Permit Sonoma also
458 compiles groundwater level data collected for certain commercial and high-capacity water
459 wells. Groundwater levels are measured from a combination of private wells, dedicated
460 monitoring wells and inactive and active public water supply wells. The groundwater-level
461 monitoring network expanded significantly under the voluntary Santa Rosa Plain
462 Groundwater Management Program (GMP) through public outreach and education to
463 private well owners who volunteered to have their wells monitored. The majority of wells
464 monitored in the program are voluntary private domestic and agricultural wells, with a
465 smaller but significant portion of publicly-owned water supply wells and dedicated
466 monitoring wells. In addition, the SWRCB GeoTracker program provides groundwater
467 level monitoring data on a number of soil and groundwater cleanup sites in the Subbasin.

470 Groundwater level monitoring is generally conducted twice a year, in the spring and fall, at
471 134 groundwater level monitoring program wells within the Subbasin and contributing
472 watershed areas, as shown on **Figure 2-7a,b**. A subset of the wells are monitored on a
473 more frequent basis, including continuous monitoring using pressure transducers. The
474 134 wells in the existing monitoring program were subdivided according to their well-
475 screen depth or total depth, where known, into the following categories:

- 476 • less than 200-feet deep
- 477 • 200 to 500 feet deep
- 478 • greater than 500 feet deep

481 • unknown well-screen and depth

482
483 DWR has measured groundwater levels in a network of wells within the Subbasin for a
484 number of decades. Most of these wells were incorporated into DWR’s monitoring network
485 between the mid-1950’s and 1981. Measurements are generally collected from these wells
486 semiannually in the spring and fall, although a subset of wells are monitored on a monthly
487 basis.

488
489 Since 2004, Permit Sonoma has administered the Use Permit Groundwater Monitoring
490 Program, which requires the measurement and reporting of groundwater-levels on a
491 quarterly or monthly basis for commercial and industrial projects requiring a use permit
492 and using over 0.5 [acre-feet per year \(afy\)](#) of water.

493
494 The DWR [California statewide Groundwater Elevation Monitoring \(CASGEM\)](#) program is a
495 state program to compile groundwater level monitoring data statewide from local
496 monitoring programs. A subset of the Subbasin groundwater level monitoring data are
497 reported by Sonoma Water to the CASGEM program.

498
499 Groundwater Quality Monitoring

500
501 Groundwater quality data has been collected through many different programs and
502 initiatives described below. The synthesis and evaluation of results from the below water
503 quality monitoring programs are described in [Section 3 \(Basin Setting\)](#).

504
505 *Public Water Supply Well Monitoring*

506 The SWRCB’s Division of Drinking Water (DDW) monitors public water system wells for
507 California Code of Regulations Title 22 requirements relative to levels of organic and
508 inorganic compounds such as metals, microbial compounds and radiological analytes. Data
509 is available for active and inactive drinking water sources, for water systems that serve the
510 public, and wells defined as serving 15 or more connections, or more than 25 people per
511 day. In the Subbasin, DDW wells were monitored for Title 22 requirements, including pH,
512 alkalinity, bicarbonate, calcium, magnesium, potassium, sulfate, barium, copper, iron, zinc,
513 and nitrate.

514
515 *GeoTracker Groundwater Ambient Monitoring and Assessment Program*

516 Established in 2000, the Groundwater Ambient Monitoring and Assessment (GAMA)
517 Program monitors groundwater quality throughout the state of California. GAMA is
518 intended to create a comprehensive groundwater monitoring program throughout
519 California and increase public availability and access to groundwater quality and
520 contamination information. GAMA receives data from a variety of monitoring entities
521 including DWR, USGS, and the State Water Resources Control Board (SWRCB).

522
523
524
525 *Water Data Library (WDL)*

526 DWR's monitors groundwater quality data and reports the results through the Water Data
527 Library (WDL). Samples are collected from a variety of well types including irrigation,
528 stock, domestic, and some public supply wells. Wells are not regularly sampled, and most
529 wells have only one or two days' worth of sampling measurements and large temporal gaps
530 between the results. Constituents most frequently monitored include dissolved chloride,
531 sodium, calcium, boron, magnesium, and sulfate. Measurements taken include conductance,
532 pH, total alkalinity and hardness (more than 1,000 total samples per parameter).
533 Additional dissolved nutrients, metals, and total dissolved solids (TDS) are also sampled
534 but have fewer sample results available (one to 1,000 samples per parameter).
535

536 *Santa Rosa Plain Salt and Nutrient Management Plan*

537 The Santa Rosa Plain Salt and Nutrient Management Plan (SNMP) was prepared in 2013 in
538 accordance with the Recycled Water Policy of 2009 (as amended in 2013) by the City of
539 Santa Rosa in collaboration with partner agencies (City of Cotati, City of Sebastopol, City of
540 Rohnert Park, Town of Windsor, and Sonoma Water). The City of Santa Rosa ~~adopted~~
541 ~~submitted~~ the final SNMP in 2013 and the NCRWQCB approved the SNMP in a letter dated
542 September 1, 2015. The SNMP proposed a conceptual monitoring framework and
543 implementation plan that the NCRWQCB approved as part of the SNMP review and
544 approval process. A Monitoring and Reporting Program is currently being developed to
545 comply with the SNMP and is proposed to include monitoring of TDS and nitrate using
546 laboratory methods, and pH, temperature and electrical conductivity (EC) using field
547 methods from 11 spatially distributed wells throughout the Subbasin. Upon the
548 implementation of the MRP, monitoring efforts will be coordinated and, where possible,
549 combined with the monitoring program described in **Section 5 of this GSP (Proposed**
550 **Monitoring Program)**.
551

552 *U.S. Geological Survey National Water Information System*

553 Special studies conducted by the USGS within the Santa Rosa Plain Subbasin have included
554 the collection and analysis of groundwater quality data. Water quality analyses have
555 included major ions, trace elements, nutrients, and stable isotopes (oxygen-18 and
556 deuterium), tritium, the radioactive isotope of carbon (carbon-14) and the stable isotope
557 carbon-13. Data collected by the USGS through these studied is available on the National
558 Water Information System (NWIS) database (<https://waterdata.usgs.gov/nwis>).
559

560 Climate Monitoring

561
562 Climate-related monitoring stations in the Subbasin and contributing watershed areas
563 provide part of the information necessary for forecasting weather conditions, flood
564 preparedness, drought preparedness, water supply planning, and for determining the
565 Subbasin water budget. Climate monitoring stations may include sensors to collect data on
566 rainfall, air temperature, relative humidity, wind speed and direction, solar radiation, soil
567 temperature and moisture. Climate data is collected by many stakeholders in the subbasin,
568 including data collected at six locations through the Western Weather Group
569 (<http://www.westernwx.com/sonoma/>) and rainfall data collected under the Community
570 Collaborative Rain, Hail & Snow Network (CoCoRAS -

571 <https://www.cocorahs.org/ViewData/CountyDailyPrecipReports.aspx?state=CA&county=S>
572 [N](#)) at three locations. Additionally, in response to the 2017 wildfires, Sonoma Water has
573 lead the deployment of 16 additional rain gauges within the Subbasin and contributing
574 watershed areas (<https://sonoma.onerain.com/home.php>).

575
576 The California Irrigation Management Information System (CIMIS) is a program unit in the
577 Water Use and Efficiency Branch, Division of Statewide Integrated Water Management,
578 California Department of Water Resources (DWR) that manages a network of over 145
579 automated weather stations in California. CIMIS was developed in 1982 by DWR and the
580 University of California, Davis to assist irrigators in managing water resources more
581 efficiently. There are two active CIMIS within the Subbasin and one active station located
582 outside the Subbasin within the contributing watershed area
583 (<https://cimis.water.ca.gov/Stations.aspx>).

584
585 The primary weather station in Santa Rosa Plain Subbasin which has been used to calculate
586 mean annual rainfall is Climate Station Sonoma County Airport (National Climatic Data
587 Center #7965). The station is located at the Charles M. Schulz Sonoma County Airport. Data
588 is available from 1903 to the present at this station, however the station dataset does not
589 contain a complete record of daily rainfall for a number of years.

590
591 Local agencies are also working collaboratively with the National Oceanic and Atmospheric
592 Administration and US Geological Survey to develop better information on weather
593 conditions, weather and river level forecasting and climate change.

594 595 Surface Water Monitoring

596
597 Existing continuous surface water monitoring in the Subbasin and contributing watershed
598 areas includes nine stream gaging stations operated by the USGS, and seven gauges
599 operated by One Rain, on behalf of Sonoma Water, and one stream gage operated by the
600 Pepperwood Preserve. Most streamflow records within the Plan Area date back to Water
601 Year 1999 through the present. Data collection for the OneRain gauges began in 2018.

602 603 Land Surface Subsidence Monitoring

604
605 In the Santa Rosa Plain, global positioning system (GPS) stations monitored by the
606 University NAVSTAR Consortium's (UNAVCO) Plate Boundary Observatory (PBO) program
607 are currently used as an indicator for subsidence. There are currently no regularly
608 scheduled theodolite or total station surveys and no extensometers in the Santa Rosa Plain.

609
610 The UNAVCO PBO network consists of a network of about 1,100 continuous GPS and
611 meteorology stations in the western U.S. used to monitor multiple pieces of information,
612 including subsidence. There is one station in the Sonoma Valley Basin and two in the upper
613 watershed: (1) P197, located on Highway 12 at Fulton Road; (2) P196, located along
614 Meacham Road southeast of Cotati, and (3) P201 located on the ridgetop just north of Mark
615 West Quarry.

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2.52.6 Existing Management Programs and Studies (Reg. 354.8 c, d, e)

There are many existing and previous water management programs, studies and initiatives that cover the Santa Rosa Plain Subbasin that have been developed for a variety of purposes by multiple agencies and organizations. This section summarizes those deemed most relevant to groundwater management planning and indicates the type of information and details from these plans that is incorporated into subsequent sections of this GSP.

Santa Rosa Plain Groundwater Management Program

In 2014, The USGS completed a groundwater study of the Santa Rosa Plain Subbasin and contributing watershed areas in collaboration with Sonoma Water, the Cities of Cotati, Rohnert Park, Santa Rosa and Sebastopol, the Town of Windsor, the County of Sonoma and the California American Water Company. This study formed the basis of the 2014 Santa Rosa Plain Watershed Groundwater Management Program (GMP) and Plan, developed for the Santa Rosa Plain Watershed under the leadership of a Basin Advisory Panel, composed of a diverse group of local stakeholders. The GMP was prepared under the authority of the Groundwater Management Act, California Water Code (Water Code) § 10750 *et seq.*, originally enacted as Assembly Bill (AB) 3030 in 1992 to encourage voluntary, non-regulatory groundwater management at the local level.

The GMP aimed to locally and voluntarily manage, protect, and enhance groundwater resources for all beneficial uses in a sustainable, environmentally sound, economical and equitable manner for generations to come. This plan identified a range of voluntary water management actions, including groundwater recharge, groundwater banking, increased water use efficiency, and greater use of recycled water to reduce demand for groundwater. Key information, tools and outcomes from these previous groundwater management planning activities include:

- Technical information on the Basin hydrology, hydrogeologic framework, water chemistry and source, surface water and groundwater interaction monitoring, and records of groundwater levels.
- Significant expansion of monitoring activities.
- Initiation of studies for groundwater banking and stormwater recharge.
- Development of an integrated computer model (GSFLOW) of surface water and groundwater systems in the Subbasin and contributing watershed area.
- Initial scoping of projects and actions to sustain groundwater resources in the Santa Rosa ~~Plan~~ Plain.
- Engagement of local stakeholders in local groundwater planning and management.

In 2017, as the Santa Rosa Plain Groundwater Sustainability Agency was forming and beginning to assume management responsibilities for the Santa Rosa Plain Groundwater Subbasin under SGMA, the Basin Advisory Panel and Technical Advisory Committee

661 developed the [Insights and Recommendations, Sonoma Valley Groundwater Conditions and](#)
662 [Management document](#).

663
664 North Coast Integrated Regional Water Management Plan Resource Partnership
665 In November 2002, California voters approved Proposition 50, the Water Security, Clean
666 Drinking Water, Coastal and Beach Protection Act of 2002. The Act encourages regional
667 cooperation in water resources planning by providing grant funding for projects identified
668 in a regional plan, referred to as an Integrated Regional Water Management Plan (IRWMP).

669
670 The North Coast Integrated Regional Water Management Plan (NCIRWMP) was formed in
671 2004 as a voluntary, non-regulatory, stakeholder-driven planning meant to emphasize
672 shared priorities and local autonomy, authority, knowledge, and approaches to achieving
673 Tribal, state, regional, and local priorities related to North Coast water infrastructure,
674 watersheds, public health, and economic vitality. The NCIRWMP changed its name in early
675 2013 to the North Coast Resources Partnership (NCRP) to distinguish the partnering
676 entities and cooperative process comprising the NCRP, and to recognize and emphasize
677 that the NCRP is embarking upon a more well-rounded planning effort in order to meet all
678 of the social, economic, and environmental challenges facing the North Coast, not only
679 those directly related to water. The NCRP continues to focus on areas of common interest
680 and concern to North Coast stakeholders, and on attracting funding to the North Coast
681 Region, and recognizes unique local solutions in different parts of the Region
682 (<https://northcoastresourcepartnership.org/>).
683 collaboration among local government, watershed groups, tribes and interested partners in
684 the North Coast region of California (<http://www.northcoastirwmp.net/>).

685 The North Coast comprises seven counties, multiple major watersheds, and a planning area
686 of 19,390 square miles, representing 12% of California's landscape, including the Plan Area.
687 It is a "source region" – for clean water, carbon sequestration, and biological diversity and
688 provides these benefits to other parts of California and the world. The NCIRWMP's focus
689 areas include restoring salmonid populations, enhancing the beneficial water uses,
690 promoting energy independence, reducing greenhouse gas emissions, addressing climate
691 change, supporting local autonomy and intra-regional cooperation, and enhancing public
692 health and economic vitality in the region's economically disadvantaged communities.

693
694 The NCIRWMP serves as a comprehensive planning tool that links other water resources
695 management plans and programs through collaborative processes, coordination and
696 communication.

697 698 Urban Water Management Planning

699 Urban Water Management Plans (UWMP) are prepared every five years by California's
700 urban water suppliers to support long-term resource planning and ensure adequate water
701 supplies are available to meet existing and future water demands. Every urban water
702 supplier that either provides over 3,000 acre-feet of water annually or serves more than
703 3,000 or more customers is required to assess the reliability of its water sources over a 20-
704 year planning horizon considering normal, dry and multiple dry years. The plans are
705 submitted to DWR, which then reviews the submitted plans to make sure they have

706 completed the requirements identified in the [Urban Water Management Planning \(UWMP\)](#)
707 [Act](#) (Division 6 Part\ 2.6 of the Water Code §10610 - 10656).
708

709 Within the Plan Area, UWMPs are prepared by Sonoma Water (as a wholesaler) and the
710 Cities of Cotati, Rohnert Park, Santa Rosa and Town of Windsor (as water retailers). The
711 _____City of Sebastopol currently serves fewer than 3,000 customers and____supplies
712 fewer than 3,000 acre-feet of water annually and, is therefore, not required to prepare an
713 UWMP. The [Plans-UWMPs](#) discuss and describe:

- 714
- 715 • Existing water supplies and infrastructure;
- 716 • Projected water demands over the next 25 years, based on population growth
717 projections, land use designations and growth policies in city and county general plans;
- 718 • Projected water supplies available over the next 25 years, the reliability of that supply,
719 and general plans for water supply projects;
- 720 • Current and planned water conservation activities;
- 721 • A water shortage contingency analysis; and
- 722 • A comparison of water supply and water demand over the next 25 years under different
723 hydrological assumptions (normal year, single dry year, four consecutive dry years).
724

725 As local groundwater makes up a portion of the water supply for urban purveyors within
726 the Subbasin, the UWMPs also discuss and describe groundwater production facilities,
727 historical and projected groundwater use and the conditions of the groundwater basin.
728 Thus, UWMPs serve as a routine mechanism for local urban water providers to coordinate
729 and plan for future urban groundwater use. The most recent projections for future urban
730 groundwater use are incorporated into [Section 3 \(Basin Setting\)](#). However, it is noted that
731 UWMPs do not consider rural residential, agriculture and small municipal/mutual water
732 systems.
733

734 In addition to the UWMPs required by the state, many local urban water providers perform
735 other water supply planning activities related to groundwater, including development of
736 water master plans, preparation of water-supply assessments for larger proposed
737 developments (more than 500 dwelling units or equivalent), updates of city and county
738 General Plans, and other activities. Information regarding some of these activities is
739 summarized below:
740

- 741 • [Water Master Plans](#) have been developed by many urban water providers in the
742 Subbasin, including the Cities of Cotati, Santa Rosa, Sebastopol and Town of Windsor,
743 which assess water supply needs and describe planned projects. The City of Santa Rosa
744 has also developed a [Groundwater Master Plan](#) to provide direction and recommended
745 policies on the City of Santa Rosa’s use of current and future groundwater resources for
746 both peaking and emergency supply.
- 747 • [Sonoma Water has developed a Water Supply Strategies Action Plan in coordination](#)
748 [with its water contractors to increase water supply system reliability, resiliency and](#)
749 [efficiency in the face of limited resources, regulatory constraints and climate change](#)
750 [uncertainties. The Water Supply Strategies Action Plan is currently being updated](#)

751 and will incorporate SGMA-related requirements and initiatives. The most recent
752 version is available at <http://www.scwa.ca.gov/water-supply-strategy/>.

- 753 • Beginning with passage of SB 610 in 2002, water supply assessments must be furnished
754 to local governments for inclusion in any environmental documentation for certain
755 projects that are subject to CEQA (as defined in Water Code 10912 [a]). The water
756 supply assessments are required to determine water supply sufficiency for a 20-year
757 projection in addition to the demand of existing and other planned future uses. Since
758 2002, a number of water supply assessments have been prepared in the Subbasin on
759 behalf of local planning agencies.

760 Water Supply Strategies Action Plan

761 ~~The Water Supply Strategies Action Plan (Action Plan) was developed by Sonoma Water in~~
762 ~~coordination with its water contractors to increase water supply system reliability, resiliency~~
763 ~~and efficiency in the face of limited resources, regulatory constraints and climate change~~
764 ~~uncertainties. Immediate actions identified within the plan Action Plan that are specific to~~
765 ~~groundwater include:~~

- 766 ~~• Identify projects that limit flooding and increase groundwater recharge;~~
- 767 ~~• Improve water supply reliability and reduce peak demands that affect Dry Creek Flows~~
768 ~~through evaluation of a Groundwater Banking Program;~~
- 769 ~~• Develop and continue non-regulatory groundwater management that emphasize~~
770 ~~development of diversified water supply “portfolios”;~~
- 771 ~~• Comply with the California Groundwater Elevation Monitoring (CASGEM) Program by~~
772 ~~implementing a voluntary groundwater level monitoring network within the county’s~~
773 ~~groundwater basins; and~~
- 774 ~~• Continue research on the natural filtration capacity of Russian River alluvial materials~~
775 ~~at the Water Agency Sonoma Water’s Russian River riverbank filtration facilities.~~

776 ~~The Water Supply Strategies Action Plan is currently being updated and will incorporate~~
777 ~~SGMA-related requirements and initiatives. The most recent version is available at~~
778 ~~<http://www.scwa.ca.gov/water-supply-strategy/>.~~

779 Climate Change Studies and Planning

780 Projected changes in climate include increased variability in precipitation and rises in air
781 temperature, resulting in a shorter wet season, longer dry season, more droughts and more
782 extreme high flows. To face these potential changes in climate local organizations are
783 working with federal and state partners, including the USGS, DWR, NOAA, and the U.S.
784 Army Corps of Engineers to advance the science in our region in an effort to plan for and
785 adapt to predicted changes. Local agencies have also partnered to form the Sonoma County
786 Regional Climate Protection Authority and developed a [Regional Climate Action Plan](#).
787 Findings and results from these efforts are described in [Section 3 \(Basin Setting\)](#) and
788 incorporated into future model projections in this GSP. [In addition, the City of Santa Rosa](#)
789 [has prepared two Climate Action Plans – the Community-wide Climate Action Plan and the](#)
790 [Municipal Climate Action Plan, both of which complement the Regional Climate Action Plan](#)
791 [\(https://srcity.org/1634/Climate-Action-Planning\)](https://srcity.org/1634/Climate-Action-Planning).

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Groundwater Banking Feasibility Study

Due to uncertainties in the reliability of regional future water supplies (both surface water and groundwater), the [Water Agency Sonoma Water](#), City of Sonoma, and other local partners, including the cities of Rohnert Park and Cotati, Valley of the Moon Water District, and the Town of Windsor (study participants) have conducted a feasibility study for a regional groundwater banking program (Groundwater Banking Feasibility Study) to investigate the viability of enhancing the conjunctive management of surface water and groundwater resources (GEI, 2013). The feasibility study report is available at: http://www.scwa.ca.gov/files/docs/water-resources/groundwater//banking/SRP-SVGroundwaterBankingFeasibilityFINAL130625REDUCED_ADA.pdf

Conceptually, the groundwater banking program would involve the diversion and transmission of surplus Russian River water produced at existing drinking water production facilities during wet weather conditions (i.e., the winter and spring seasons) for storage in aquifers beneath the Santa Rosa Plain and/or Sonoma Valley. The stored water would then be available for subsequent recovery and use during dry weather conditions (i.e., the summer and fall seasons) or emergency situations. The Groundwater Banking Feasibility Study provided an evaluation of the regional needs and benefits, source water availability and quality, regional hydrogeologic conditions, and alternatives for groundwater banking.

Based on the findings from the study, pilot studies to further assess the technical feasibility of Aquifer Storage and Recovery (ASR) as a method for groundwater banking were recommended and currently are being pursued in Sonoma Valley, where a pilot project was completed in Fall of 2018 in the City of Sonoma.

Water Conservation

Numerous regional and local water conservation programs are operational in the Plan Area. The Sonoma-Marin Saving Water Partnership represents 10 water utilities in Sonoma and Marin counties that are signatories to the [California Water Efficiency Partnership \(CalWEP\)](#) ~~California Urban Water Conservation Council (CUWCC)~~ and have joined to create a regional approach to water use efficiency. Within the Subbasin, these utilities include the Cities of Cotati, Rohnert Park, Santa Rosa, Town of Windsor and Sonoma Water. Each of these member utilities, in addition to the City of Sebastopol and California American Water Company, have water conservation programs to assist their communities [in improving water use efficiency](#) reduce water ~~use~~waste. Water conservation and water-use efficiency program elements specific to the Sonoma-Marin Saving Water Partnership include:

- Establishing a conservation coordinator, water waste prohibition, assistance and water loss control programs (audits, leak detection and repair).
- Urban water metering and conservation pricing (tiered structure).
- Developing and maintaining public information and school education programs on water and conservation.

- 840 • Specific urban residential programs for increasing indoor (high efficiency toilets,
841 fixtures, and washers) and outdoor (landscaping assistance, surveys and retrofits)
842 for increasing conservation.
- 843 • Specific industrial and large landscape assistance, surveys and retrofits for
844 increasing conservation.
- 845 • Rebate programs for high-efficiency appliances and fixtures.
- 846 • Qualified water efficient landscaper training that provides education on proper
847 plant selection for local climates, irrigation system design and maintenance, and
848 irrigation system programming and operation.
- 849 • Online water wise gardening website which offers a Mediterranean and native plant
850 list, design and garden installation tips, and irrigation system design and
851 maintenance information.
- 852 • Green business program that provides businesses with water and energy
853 conservation information and incentives, to reduce waste and prevent pollution.

854

855 More information is available at <http://www.savingwaterpartnership.org/>.

856

857 Windsor Efficiency “pay as you save®” (PAYS®) is a mechanism to provide efficiency
858 upgrades for Windsor home and apartment occupants. Examples of water efficiency
859 measures eligible under the program high efficiency showerheads, toilets, and faucet
860 aerators, drought resistant landscaping and high efficiency clothes washers.

861

862 Governor Brown’s Drought Executive Order of April 1, 2015 (EO B-29-15) directed DWR to
863 update the State’s Model Water Efficient Landscape Ordinance (MWELO) through
864 expedited regulation. Local agencies must adopt the MWELO or adopt a local ordinance The
865 State Legislature adopted the "Water Conservation in Landscaping Act of 2006" (AB 1881)-
866 requiring the Department of Water Resources to update the State Model Water Efficient
867 Landscape Ordinance. All local land use agencies were required to adopt the model-
868 ordinance, which must be at least as effective in conserving water as MWELO or develop an
869 ordinance that is at least as effective by January 1, 2010/December 1, 2015. Executive Order
870 B-29-15 and the revised ordinance require that local agencies report on the
871 implementation and enforcement of their single agency Local Ordinances to DWR by
872 December 31, 2015. Reporting for all agencies is due by January 31st of each year
873 thereafter.

874

875 The county and cities have all developed individual water efficient landscape ordinances.
876 The new water efficient landscape ordinances require a landscape plan check for certain
877 projects, as described in the ordinance. It includes requirements for landscape water
878 budgets, landscape and irrigation design, and irrigation scheduling.

879

880 There are also a number of resources for implementing water conservation practices for
881 rural landowners not connected to city water utilities or who are ineligible for urban water
882 conservation program rebates. These include:

883

- 884
- 885 • A water conservation and stormwater management guide for all types of
886 landowners is ~~called the~~ “[Slow it. Spread it. Sink it. Store It!](#)” ~~publication~~ produced
887 by the Sonoma RCD. This homeowner’s and landowner’s guide offers many ideas
888 and tips on practices that can help to protect and replenish groundwater resources,
889 reduce erosion and pollution, prevent flooding and increase water conservation and
890 stormwater management.
 - 891 • A guide focusing on rainwater catchment systems ~~is the~~ called “[Roof Water](#)
892 [Harvesting for a Low Impact Water Supply](#)” ~~booklet~~ produced by the Occidental Arts
893 and Ecology Center’s WATER Institute.

894

895 The Sonoma RCD, Napa RCD, and the USDA Natural Resources Conservation Service
896 developed the LandSmart program to promote productive lands and thriving streams
897 through planning and on-the-ground implementation on beneficial management practices.
898 The program is applicable to a variety of agricultural lands. LandSmart Plans are developed
899 by the agricultural producer, either independently, through workshops, or through one-on-
900 one assistance from an RCD. Producers can also seek certification from the RCD’s
901 certification team once plans are complete. Plan templates and guidance materials are
902 designed to assess current practices and identify recommendations for other practices that
903 would benefit natural resources such as water quantity and quality. Practices are
904 prioritized and tracked over time. For more information on LandSmart™ visit:
905 www.LandSmart.org.

906

907 Members of Wine Institute and the California Association of Winegrape Growers
908 introduced the Code of Sustainable Winegrowing Practices Self-Assessment Workbook in
909 2002 to promote environmental stewardship and social responsibility in the California
910 wine industry. The workbook is a self-assessment tool for California’s vintners and
911 growers and provides practical information on how to conserve natural resources, protect
912 the environment and enhance relationships with employees, neighbors and local
913 communities. The workbook addresses a number of criteria for measuring performance,
914 including Vineyard Water Management and Winery Water Conservation and Quality. More
915 information on sustainable winegrowing practices is available at
916 <http://www.sustainablewinegrowing.org/>. Additionally, the Sonoma County Winegrowers
917 have developed a Sustainability Certification Program for vineyards, which includes water
918 conservation assessments.

919

920 Stormwater Management

921 The need for integrating appropriate stormwater management practices while protecting
922 and preserving groundwater resources is increasingly recognized and have been integrated
923 into several initiatives and planning efforts.

924

925 Storm Water Resources Plans (SWRPs) are required by Senate Bill 985 (Pavley, 2014) in
926 order to be eligible to seek funding from any future state bond measures for storm water
927 projects. A SWRP is a non-regulatory, watershed-based and stakeholder-driven plan that
928 builds on local storm water management objectives and identifies and prioritizes projects

929 that capture, treat or reuse storm water and dry weather runoff. The [Russian River](#)
930 [Regional Storm Water Resource Plan](#) was developed by the Russian River Watershed
931 Association for the Russian River Watershed (which includes the Subbasin) with support
932 from local agencies and partners to identify and prioritize stormwater management
933 projects. These projects must provide at least two benefits which may include
934 environmental enhancement, flood protection, groundwater recharge, water quality
935 improvement and/or recreational opportunities. The ~~resulting plan~~ [Russian River Regional](#)
936 [SWRP](#) provides a framework for submitting, quantifying, scoring, and ranking future
937 projects in an objective and data driven format.

938
939 In three of its flood zones, Sonoma Water conducted scoping studies to identify
940 opportunities to alleviate flooding, while possibly recharging groundwater aquifers or
941 providing other benefits. The “Stormwater Management-Groundwater Recharge” studies
942 assessed the feasibility of projects in Laguna-Mark West watershed, the Sonoma Valley
943 watershed and the Upper Petaluma River watershed. Information and results from these
944 studies have informed the development of the SWRP.

945
946 Local growers have also been investigating the feasibility of performing on-farm recharge
947 projects within the Subbasin through the performance of pilot studies and field
948 investigations.

949 *Municipal Stormwater Permit Program*

950 California’s Municipal Storm Water (MS4) Permitting Program regulates stormwater
951 discharges through a permitting program [under the National Pollution Discharge](#)
952 [Elimination System \(NPDES\)](#). ~~The~~ Sonoma Water is a co-permittee with the City of Santa
953 Rosa and the County of Sonoma inside the same MS4 permit boundary, incorporating most
954 of the Subbasin. The City of Santa Rosa and unincorporated areas near the cities of
955 Healdsburg, Windsor, Santa Rosa, Rohnert Park, Cotati, and Sebastopol are included in the
956 permit. [In early 2013, jurisdictions that had been designated as Phase II municipalities](#)
957 [within the Russian River Watershed were provided an option to align with the Phase I](#)
958 [program in an effort for watershed-wide consistency and collaboration. The cities](#)
959 [of Cloverdale, Cotati, Rohnert Park, Healdsburg, Sebastopol, Ukiah, and the Town of](#)
960 [Windsor, and the Phase II designated portions of the County of Sonoma elected to](#)
961 [participate in the Phase I program as Co-Permittees.](#) To comply with the MS4 permit, the
962 City of Santa Rosa and County of Sonoma developed a Low Impact Development Technical
963 Design Manual, providing technical guidance for project designs that require the
964 implementation of permanent stormwater BMPs. Low Impact Development (LID), as it
965 relates to storm water, aims for a design to mimic the hydraulic function of the
966 undeveloped site by capturing, treating, and infiltrating storm water as close to the source
967 as possible, and locating small scale landscape-based features throughout the project site.
968 [Each Co-Permittee is responsible for applying these Permit requirements in conformance](#)
969 [with this LID Manual, at a minimum, to new development, retrofit projects, and applicable](#)
970 [infrastructure improvement projects within their jurisdiction.](#)

971
972
973 *Water Smart Development Guidebook*

974 ~~The Water Agency~~ [Sonoma Water](http://www.scwa.ca.gov/watersmartdevelopment/) developed the Water Smart Development Guidebook to
975 provide Sonoma County land developers, city and county planning officials, and
976 environmental regulatory agencies with a reference guide that can help them avoid and
977 minimize potential adverse impacts to water resources from development projects. The
978 guidebook provides guidance for planning and designing water resource related project
979 elements for residential and commercial developments. The three core guidebook sections
980 focus on ways to increase water conservation and water reuse and reduce stormwater
981 impacts. The guidebook is available online at:
982 <http://www.scwa.ca.gov/watersmartdevelopment/>.

985 **2.62.7 Well Permitting Policies and Procedures**

988
989 Sonoma County Permit and Resource Management Department (Permit Sonoma) is the
990 local agency responsible for administering permits for wells within the Subbasin. The
991 purpose of the County's well construction policies is to provide for the location,
992 construction, repair, reconstruction, destruction and addressing abandonment of all wells
993 to protect the groundwater resource of the County, as contamination may cause serious
994 public health, safety or economic problems. Permit Sonoma reviews all development
995 proposals within unincorporated areas that will rely on wells for water supply.

996 The Sonoma County Well Ordinance contains regulations and requirements for
997 constructing wells to prevent groundwater contamination from the surface, and between
998 multiple water bearing zones in (Ordinance 25B). The well construction standard does not
999 regulate flow volumes or rates, nor does it evaluate water availability or local
1000 hydrogeology.

1001
1002 Permit Sonoma has developed a four-tier classification system, based on geologic
1003 information and water yields, to designate general areas of groundwater availability
1004 (**Figure 2-9**). Class 1 areas are Major Groundwater Basins; Class 2 areas are Major
1005 Natural Recharge Areas; Class 3 areas are Marginal Groundwater Availability Areas; and
1006 Class 4 areas are Areas with Low or Highly Variable Water Yield. The web link is:
1007 http://www.sonoma-county.org/prmd/gisdata/pdfs/grndwater_avail_b_size.pdf

1008
1009 Permit Sonoma uses this groundwater classification system map for reviewing certain
1010 development and building permit applications. Discretionary applications in Class 3 and 4
1011 areas and in SGMA medium and high priority basin are required to include hydrogeologic
1012 reports to establish that groundwater quality and quantity are adequate and will not be
1013 adversely impacted by the cumulative developments and uses allowed in the area. The aim
1014 is to avoid causing or exacerbating an overdraft condition in a groundwater basin or
1015 subbasin. In addition, discretionary applications in Class 4 areas are required to complete
1016 an aquifer pumping test.

1018 Additionally, the County commissioned a pilot study of 3 areas it determined to have
1019 relatively scarce groundwater, including portions of the contributing watershed areas of
1020 the Subbasin (Bennett Valley and Mark West Study Areas). The study examined climate,
1021 land use and the depths of wells drilled over time (Kleinfelder, 2003). Based on this pilot
1022 study, Permit Sonoma established permit requirements and guidelines for performing
1023 pump tests on new water-wells in water scarce areas. The study also recommended further
1024 studies of these water scarce areas.

1025
1026 Since 2004, Permit Sonoma has required groundwater-level measurement and volume
1027 reporting on a quarterly or monthly basis from commercial and industrial projects
1028 requiring a use permit, and using more than 0.5 afy of water.

1029
1030 Sonoma County municipal code water well requirements are available on the web at:
1031 [https://library.municode.com/ca/sonoma_county/codes/code_of_ordinances?nodeId=CH](https://library.municode.com/ca/sonoma_county/codes/code_of_ordinances?nodeId=CH25BWAWECOST)
1032 [25BWAWECOST](https://library.municode.com/ca/sonoma_county/codes/code_of_ordinances?nodeId=CH25BWAWECOST)

1033 **2-72.8 Additional GSP Elements (Reg. 354.8 (g))**

1034
1035 The GSP Regulations require that the Plan Area section include a description of any of the
1036 additional GSP elements from Water Code 1027.4 that the GSA determines to be
1037 appropriate. **It is anticipated that many, if not all of the below elements will be**
1038 **addressed in subsequent sections of the GSP. Once those sections are complete, this**
1039 **section will be updated to indicate where the specific descriptions are located.** The
1040 additional GSP elements listed in Water Code 1027.4 are:

- 1041
- 1042 (a) Control of saline water intrusion.
- 1043 (b) Wellhead protection areas and recharge areas.
- 1044 (c) Migration of contaminated groundwater.
- 1045 (d) A well abandonment and well destruction program.
- 1046 (e) Replenishment of groundwater extractions.
- 1047 (f) Activities implementing, opportunities for, and removing impediments to,
- 1048 conjunctive use or underground storage.
- 1049 (g) Well construction policies.
- 1050 (h) Measures addressing groundwater contamination cleanup, groundwater recharge,
- 1051 in-lieu use, diversions to storage, conservation, water recycling, conveyance, and
- 1052 extraction projects.
- 1053 (i) Efficient water management practices, as defined in Section 10902, for the delivery
- 1054 of water and water conservation methods to improve the efficiency of water use.
- 1055 (j) Efforts to develop relationships with state and federal regulatory agencies.
- 1056 (k) Processes to review land use plans and efforts to coordinate with land use planning

1057 agencies to assess activities that potentially create risks to groundwater quality or
1058 quantity.

1059 (l) Impacts on groundwater dependent ecosystems.

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Working Draft