

4.13 Public Services and Utilities and Public Safety

4.13.1 Introduction

This section describes the existing public services and utilities within the Russian River Estuary Management Project (Estuary Management Project or proposed project) area and evaluates potential impacts associated with disruption of services that could result from implementation of the Estuary Management Project. This section also addresses public safety concerns associated with creation of the outlet channel. The analysis is based on review of the guidance developed by regulatory agencies and local ordinances, and regulations set by the cities and counties in the action area. The Impacts and Mitigation Measures section defines significance criteria used for the impact assessment and presents a discussion of potential project-related impacts.

4.13.2 Setting

The following discussion provides the setting for the Estuary Project Area. As previously noted in **Chapter 2.0, Project Description**, under certain closed conditions, the Estuary may backwater to Monte Rio, and as far upstream as Vacation Beach. Although this condition may periodically occur, potential impacts related to public services and utilities are generally thought to be limited to the seven mile area downstream of Austin Creek, which is typically defined as the Russian River Estuary. Where appropriate, the public services and utilities within the maximum backwater area are characterized for context.

Public Services

Police Protection

The Sonoma County Sheriff's Office provides law enforcement, security services, and detention services for cities and unincorporated areas in Sonoma County. Headquartered in the City of Santa Rosa, the Sheriff's Office is divided into seven zones. The Estuary Management Project area is located within the 557-square mile River Zone (Zone 1). The River Zone is staffed from the Guerneville Substation, located at 1st & Church Streets in Guerneville, and encompasses 63 miles of the Sonoma coastline and unincorporated areas surrounding Guerneville. The substation is staffed with two sergeants and sixteen deputy sheriffs. In addition to the deputies from the Guerneville substation, there are three resident deputies and one community services officer who patrol the coastal areas (Sonoma County Sheriff's Office, 2009).

Fire Protection

Fire protection services are provided by the Sonoma County Fire and Emergency Services Department. The Department is comprised of four divisions: administration, fire services, hazardous materials¹, and emergency management. The Emergency Management Division of the Department of Emergency Services is responsible for the planning, coordination of response, recovery, and

¹ The Hazardous Materials Division is discussed in more detail in Section 3.12, Hazards and Hazardous Materials.

mitigation activities related to county-wide emergencies and disasters. There are several fire departments serving the project area and surrounding jurisdictions.

Russian River Fire Protection District (FPD), located at 14100 Armstrong Woods Road in Guerneville, serves communities along 18 miles of Russian River and is comprised of nine full-time employees, a Battalion Chief, two captains, three engineer/Emergency Medical Technicians (EMTs), and three Firefighter/Paramedics, and a shared Fire Chief. The primary station operates 24/7/365, while a secondary station located in Rio Nido provides equipment storage and meeting facilities. The Russian River FPD serves approximately 5,000 residents and 10,000 seasonal visitors (RR FDP, 2010).

Neighboring fire departments include Monte Rio Volunteer Fire Department (stations located on Highway 116 in Jenner, Duncans Mills, and Monte Rio) and Bodega Bay FPD, located at 510 Highway 1 in Bodega Bay. There are also a series of volunteer fire departments in the vicinity: Bodega Volunteer Fire Department (17184 Bodega Hwy, Bodega); Camp Meeker Volunteer Fire Department (Bohemian Highway, Camp Meeker); Valley Ford Volunteer Fire Department (14445 Highway 1, Jenner), and Occidental Volunteer Fire Department (Bohemian Highway, Occidental).

Emergency Medical Services and Facilities

The Coastal Valleys Emergency Medical Services (EMS) Agency², provides administrative and regulatory oversight responsibilities for the local EMS system within Sonoma County. The primary function of the EMS Agency is to plan, implement, and evaluate the local EMS system, which includes the licensing/permitting of ambulance provider companies, hospitals, coordination and monitoring of air and ground ambulances, certification/accreditation of pre-hospital care personnel such as EMTs and paramedics, policy development and implementation, medical control, quality improvement, and disaster medical response preparedness.

Pursuant to the California Health and Safety Code, Sonoma County designated the Sonoma County Department of Health Services as the Local Emergency Medical Services Agency. In Sonoma County all ambulances are staffed at an advanced life support (ALS) level while most first responder services are at the basic life support (BLS) level. Nine ground ambulance provider agencies and two helicopter providers (1 air ambulance & 1 ALS Rescue) provide emergency medical transportation in Sonoma County. In July 1999, Sonoma County entered into an exclusive franchise contract with Sonoma Life Support (SLS) to provide emergency ambulance and advanced life support services to a specified portion of the county. A mix of fire department based and private ambulance providers service the remainder of the County.

² The EMS Agency operates under State authority established in Division 2.5 of the California Health and Safety Code, and Title 22, Division 9 of the California Code of Regulations. Local regulation of the EMS system is effected through the County Emergency and Pre-Hospital Medical Services System Ordinances, and EMS Agency policies and procedures.

There are seven hospitals in Sonoma County. There are no medical facilities within the seven-mile Estuary Project Area. The area is served by Santa Rosa Memorial Hospital, a St. John Healthcare affiliate, located at 1165 Montgomery Drive in Santa Rosa, which has 19 EMS stations and has been designated as a Level II trauma center (on site specialists) (Sonoma County, Department of Health Services, 2010).

Schools

In Sonoma County, there are 40-kindergarten through grade 12 school districts, 31 elementary school districts, and 6 unified districts. The project area is served by the Harmony and Monte Rio Elementary School Districts. Students attending elementary schools in the Harmony and Monte Rio Union districts transition into secondary schools in the West Sonoma County Union High School District.

There are no schools within the immediate seven-mile Estuary Project Area. The nearest schools are Harmony Elementary School and Salmon Creek Middle School located at 1935 Bohemian Highway, Occidental; Monte Rio Union Elementary School (K-8) located at 20700 Foothill Drive, Monte Rio (Sonoma County Office of Education, 2010).

Libraries

Sonoma County library system, comprised of 13 participating library branches, serves unincorporated areas in Sonoma County and participating cities. The nearest libraries to the project area are the Guerneville Regional Library (14107 Armstrong Woods Road, Guerneville) and the Occidental Library (73 Main Street, Occidental).

Postal Service

United States Postal Service receives and delivers mail at the United States Post Office, located at 10439 Highway 1, Jenner California, within the project area.

Utilities

Water and Sewer

Potable, commercial, industrial and agricultural water supplies in Sonoma County are derived from a number of sources, including surface water, groundwater, and recycled water. Residences and businesses in the Jenner and Duncans Mills rely heavily on groundwater wells. Additional water service and sewer service providers in the vicinity are described below.

Sweetwater Springs Water District

Sweetwater Springs Water District (SSWD) serves Guerneville, Monte Rio, Rio Nido and Ville Grande. SSWD was formed in 1988 after a public vote under Sonoma County Water District Law. SSWD acquired an existing water supply system from Citizens Utilities Company. SSWD serves approximately 3,800 accounts, primarily residential, for about 9,000 persons (SSWD, 2008).

Russian River Utility

The Russian River Utility (RRU) is a water and sewer management company that provides water and wastewater treatment, water distribution and water reclamation services. RRU manages the Jenner Water System, a “County Service Area Water System”. County Service Area Water Systems are public municipal water systems which are under the water quality and reporting requirements of the California Department of Health Services. The fiscal budget and water rates are approved by the Sonoma County Board of Supervisors. The Jenner Water System serves 123 customers with surface water pumped from Jenner Creek. Raw water is treated in a multimedia gravity filter treatment plant and stored in a 100,000-gallon tank (RRU, 2010).

Cal Water Redwood Valley District

Cal Water’s Redwood Valley District formed in 2000 with the purchase of the Redwood Valley Water Company and serves Lucerne, Duncans Mills, Guerneville, Dillon Beach and a portion of Santa Rosa (Cal Water 2010).

Russian River County Sanitation District (RRCSD)

The Water Agency operates the Russian River County Sanitation District (RRCSD)³, which provides wastewater treatment, reclamation, and disposal services for a 2,700-acre service area that includes the unincorporated areas of Rio Nido, Guerneville, Guernewood Park, and Vacation Beach. RRCSD operates under an individual permit from the California Regional Water Quality Control Board North Coast Region that sets the requirements for operation. The RRCSD treatment plant provides service to approximately 3,300 customers using a gravity collection system and treats wastewater from approximately 3,200 equivalent single-family dwellings (SCWA, 2010a).

There are also residences and other buildings in Jenner and Duncans Mills within the Estuary Project Area operating on septic systems.

Solid Waste Processing and Disposal Facilities

Sonoma County Waste Management Agency (SCWMA) provides recycling, garbage, and yard waste collection services in the project area. The nearest designated disposal sites to the project area are the Guerneville Transfer Station (13450 Pocket Road/Highway. 116) (SCWMA, 2010).

Hazardous Waste Facilities

SCWMA provides household and business hazardous waste collection services on Tuesdays and Wednesdays, 7:30 a.m. to 2:30 p.m. at the Central Disposal Site, located at 500 Mecham Rd., Petaluma. Appointments and fees are required for business materials disposal. SCWMA also sponsors a “Community Toxics Collection” which allows scheduled pick-ups in locations proximate to the project area, such as Guerneville and Monte Rio (SCWMA, 2010).

³ RRCSD began operating in 1983, and during a 1995 restructuring of the county government, the Water Agency began managing the RRCSD.

Electricity

Pacific Gas and Electric (PG&E) is the primary electric service provider for businesses and residences in Jenner and Duncans Mills.

Mosquito Abatement

The Marin/Sonoma Mosquito and Vector Control District (MSMVCD) was the first mosquito abatement district to be established. MSMVCD includes an area of 2,300 square miles, with a human population of 715,000 (MSMVCD, 2007). The mission of the MSMVCD is to protect the comfort and health of the public through the abatement of mosquitoes and other vectors. In July 2004, the MSMVCD adopted an Integrated Vector Management Program and expanded the area of coverage to include all of Marin and Sonoma Counties. The MSMVCD's Integrated Vector Management Program (IVMP) establishes guidelines for incorporating six types of activities to facilitate an effective mosquito and vector control program. These activities include: 1) Surveillance, 2) Communication, 3) Education, 4) Physical Control, 5) Biological Control, and 6) Chemical Control (MSMVCD, 2004).

There are more than fifty species of mosquitoes in California, of which twenty-two are in Marin and Sonoma Counties (MSMVCD, 2008). The most common mosquito species in wetlands of Marin and Sonoma Counties are the *Anopheles freeborni* (Aitken), *Aedes dorsalis* (Meigen), *Aedes squamiger* (Coquillett), and *Culex tarsalis* (Coquillett) (MSMVCD, 2000).

4.13.3 Regulatory Framework

General Local Policies

Local policies established in the *Sonoma County General Plan 2020* that govern geologic resources in the project area are summarized in Section 4.13 in **Appendix 4.0, Local Regulatory Framework Governing Environmental Resources**.

Public Safety

Sonoma County Water Agency Standard Operating Procedures for Breaching

During breaching, public access to the beach is restricted using barricade tape and signage, and assigning an onsite contact for emergency response and/or rescue procedures and to perform site control during heavy equipment operation. Warning signs are posted prior to the breaching event 750 feet on each side of the proposed channel location. Stop work orders may be issued when work conditions are hazardous, including storms and high surf. The Water Agency notifies safety and other agencies with jurisdiction, including Sonoma Coast State Parks lifeguards and Monte Rio Fire Department, and posts notifications near the barrier beach 24 hours before to 24 hours after breaching. Some of the protocols are required by the State Parks temporary use permit (SCWA, 1999).

Prior to operation, employees and contractors are required to verify all heavy equipment is in good working order (track alignment, lubrication, hydraulics). Experienced and qualified heavy equipment operators will be used (Journeyman⁴ level is preferred). Pre-excavation, on-site safety briefings (employees and contractors) will occur daily or as needed to discuss and review the work plan, personal protective equipment, communications, emergency procedures, etc. Safety equipment for all staff includes life jackets, throw ring and rope, air horns, and hand held radios. Onsite staff carries a list of emergency contacts. Radio personnel with active radio communication are strategically stationed, including one on an adjacent cliff, to observe overall safety parameters.

If emergency response is required, observation staff would contact dispatch 9-1-1 by radio and notify State Parks at Duncans Mills, the local fire department and the US Coast Guard. If drowning or engulfment were to occur, the standby person would immediately notify the observation staff of the emergency and proceed to dispatch the rescue throw bag (life ring) and retract lifeline to save the victim.

4.13.4 Environmental Impacts and Mitigation Measures

Significance Criteria

The thresholds for determining the significance of impacts for this analysis are based on the environmental checklist in Appendix G of the CEQA Guidelines. For this analysis, the project would be considered to have a significant impact on public services and utilities if it would:

1. Result in substantial adverse physical impacts associated with the provision of, or the need for, new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the following public services: fire protection, police protection, schools, parks, other public facilities;
2. Conflict with wastewater treatment requirements of the applicable Regional Water Quality Control Board;
3. Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects;
4. Require or result in the construction of new storm water drainage facilities, or expansion of existing facilities, the construction of which could cause significant environmental effects;
5. Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed;
6. Result in a determination by the wastewater treatment provider that would serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments;
7. Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs; and

⁴ "Journeyman" refers to a skill level required for a specific trade (above novice, below master).

8. Comply with federal, state, and local statutes and regulations related to solid waste.

Additional significance criteria are considered in this analysis to determine potential effects to public safety. For this analysis, the project would be considered to have a significant impact on public services and utilities if it would:

1. Substantially affect public safety; and
2. Affect the use of septic tanks or alternative waste water disposal systems where sewers are not available for wastewater disposal.

Based on the nature and function of the Estuary Management Project, several of the criteria included in Appendix G of the CEQA Guidelines do not apply to this analysis and are not used, as explained below.

Impacts from New Water/Wastewater Facilities. The project involves continued artificial breaching, consistent with existing practices, and grading on the barrier beach to create an outlet channel to enhance fish habitat; the project would not require additional public services. The Estuary Management Project would not require or result in direct construction of water or wastewater facilities; therefore there would be no environmental effects associated with creation of new water or wastewater facilities.

Impacts from New Stormwater Facilities. The project involves continued artificial breaching, consistent with existing practices, and grading on the barrier beach to create an outlet channel to enhance fish habitat; the project would not require additional public services. The project is proposed to moderate water levels in the Estuary and would not affect stormwater retention or drainage such that existing facilities would need to be upgraded or new facilities would be required; therefore there would be no environmental effects associated with construction of new stormwater facilities. Refer to **Section 4.3, Water Quality**, for a discussion of drainage systems and potential impacts to permeability and infiltration.

Water Supply. The Estuary Management Project would not demand water supplies in excess existing entitlements and resources available to serve the project from, or require new or expanded entitlements. The project involves continued artificial breaching, consistent with existing practices, and grading on the barrier beach to create an outlet channel to enhance fish habitat; the project would not require additional water supplies. The project does not require water supply from existing entitlements, nor would it require new entitlements or resources; therefore there is no impact to water supply.

Solid Waste. The Estuary Management Project would not be served by a landfill with insufficient permitted capacity to accommodate the project's solid waste disposal needs. The project involves continued artificial breaching, consistent with existing practices, and grading on the barrier beach to create an outlet channel to enhance fish habitat; the project would not generate solid waste, demand waste disposal services, or contribute materials to a landfill with limited capacity. The quantity of sand moved to create the outlet channel would depend on beach topography at the time of project implementation, and would not exceed 2,000 cubic yards. Any sand excavated from the channel would be placed on the adjacent beach within the wave wash zone to promote natural removal to minimize changes to beach topography outside the outlet channel; it would not be transported or disposed of

offsite. Therefore, the proposed project has no impact on landfill capacity and would not violate solid waste regulations.

Approach to Analysis

This analysis considers the potential for implementation of the Estuary Project to exceed regulatory thresholds defined above, or interfere with provision and/or use of public services. Services and service providers within the project area, defined above, and considered in the analysis.

As noted in **Chapter 2.0, Project Description**, the Water Agency would continue its current practice of artificial breaching outside of the lagoon management period of May 15 through October 15. Timing, implementation, access, sensitivity to pinniped haulout, personnel, equipment and general procedures would be equivalent to current practices, as described in **Section 2.2.2**. No change to artificial breaching outside of the lagoon management period would occur under the Estuary Management Project.

Impact Analysis

Impacts associated with public services and utilities and public safety are summarized and categorized as either “no impact,” “less than significant,” “less than significant with mitigation,” or “significant and unavoidable.”

Impact 4.13.1: Emergency Response Times and Public Facilities. The Estuary Management Project could result in substantial adverse physical impacts associated with the provision of, or the need for, new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the following public services: fire protection, police protection, schools, parks, other public facilities. (Less than Significant)

The project involves continued artificial breaching, consistent with existing practices, and grading on the barrier beach to create an outlet channel to enhance fish habitat; the project would not require additional public services. The project does not include alternation of existing governmental facilities, nor would it increase the demand for emergency or public services such that additional facilities would be required to meet acceptable service ratios, response times, or other performance objectives. Creating and maintaining the outlet channel would require one or two pieces of heavy equipment (e.g. excavator or bulldozer) to move sand on the beach. Presence and activity of construction equipment would not occur within emergency access routes and would not affect response times for emergency service providers. There are no schools within the project area; therefore there would be no affect to performance of school facilities. Please refer to **Section 4.7, Recreation**, for a discussion of impacts to parks.

Impact Significance: Less than Significant; no mitigation measures are required.

Impact 4.13.2: Conflict with regulatory requirements. The Estuary Management Project could conflict with wastewater treatment requirements of the applicable Regional Water Quality Control Board. (Less than Significant).

The project involves artificial breaching, consistent with existing practices, and grading on the barrier beach to create an outlet channel to enhance fish habitat; the project would not require additional public services. The project would not generate wastewater that would be processed at a wastewater treatment regulated by the North Coast Regional Water Quality Control Board; therefore there is no conflict with wastewater treatment requirements.

Impact Significance: Less than Significant; no mitigation required.

Impact 4.13.3: Public Safety. The Estuary Management Project could substantially affect public safety at the outlet channel location during channel creation. (Less than Significant with Mitigation)

During continued artificial breaching and outlet channel creation, the Water Agency will deploy and operate heavy machinery on the beach. This activity is consistent with existing artificial breaching practices, which are currently implemented in accordance with the Water Agency's Standard Operational Procedures. To minimize hazards to beach visitors, the Water Agency will contact California State Parks lifeguards, post advanced signage, and restrict beach access. Additionally, as part of project implementation, the Water Agency will continue to implement and comply with their Standard Operational Procedures, discussed in detail in **Section 4.13.3, Regulatory Framework**. After outlet channel establishment, construction vehicles will be removed and beach access will be restored. While public citizens are responsible for safe enjoyment of the beach, the Water Agency will implement **Mitigation Measure 4.13.1**, which requires installation of signage at key locations to notify the public of potential safety hazards associated with beach erosion and hydrologic action at the outlet channel or artificial breaching location.

Mitigation Measures

Mitigation Measure 4.13.1: Following outlet channel creation or artificial breaching, the Water Agency will install semi-permanent signage notifying beach users of channel conditions, potential for safety hazards from beach erosion or hydrologic action, and emergency contact information. Signage should be posted and maintained at key locations, such as the parking lot at Goat Rock State Beach Parking lot, the unofficial beach access trail located on the north side of the beach off Highway 1, and 100 feet on either side of the outlet channel.

Impact Significance after Mitigation: Less than Significant.

Impact 4.13.4: Septic Tanks. The Estuary Management Project could substantially affect the function of septic tanks or other alternative waste water disposal systems. (Less than Significant)

During the lagoon management period, Estuary water level is anticipated to be maintained between seven and 9 feet for duration of as long as five months. As required under the NMFS Russian River Biological Opinion, the Water Agency evaluated the types of properties, structures, and associated infrastructure that would potentially be inundated under altered water levels. As described earlier (**Chapter 3.0, Project Background and Environmental Setting**), portions of approximately 78 parcels would be inundated at a water surface elevation of 9 feet within the Estuary Study Area. Additional parcels may be affected within the maximum backwater area. In most cases, the area of inundation would comprise channel margin (“shoreline”) and beach areas only, and no structures (e.g., homes, sheds, septic tanks, boat docks, etc.) would be directly affected. However, in a few cases, a preliminary analysis using elevation data, and parcel information (SCWA, 2010b) suggests that existing septic systems that serve several of the parcels could be affected if Estuary water levels rise to 10- to 12-feet. Direct effects to septic systems would be low. However, increased water levels over a longer duration could result in secondary effects from increased groundwater seepage and corresponding increased groundwater levels that could inundate septic leach fields, curtailing processing function and potentially pushing sewage upward. Two parcels with septic leach fields, identified by their Assessor’s Parcel Number (APN), would potentially be affected at the 10- to 12-foot level:

1. **APN 099-140-089:** Parcel consists of four rental houses on the west side of Highway, south of Rivers End; at least one of which still operated on redwood box cesspools. Existing site constraints indicate that likely none of the units currently have adequate leach fields. Water Agency consultation with the landowner determined septic systems are generally considered to be at risk at higher water elevations (10- to 12-feet).
2. **APN 099-150-012:** Parcel does not contain structures; however consists of a septic system that serves five adjacent private residences and four cabins. Based on consultation with the landowner, it was determined that the leach fields serving these residences may be at risk at higher water elevations (10- to 12-feet).

The increase in the duration over which these septic leach fields could be annually inundated by increased groundwater levels could result in potentially more damage than that which is sustained under existing conditions and Estuary management activities. However, several factors render this potential impact to less than significant. First, the current operating condition of the leach fields suggests that the function is already compromised, and Estuary Management Project contribution would only be incremental compared to the current condition. Second, as discussed in **Chapter 2.0, Project Description**, target water level is seven feet; impacts to septic leach fields are not expected to occur until water level increases to higher 10- to 12-foot levels. Historically, Estuary water levels have reached 10- to 12- feet, particularly during high flow years or during winter storm events when artificial breaching was not executed. Based on consideration of the risk, and additional consideration factors, potential impact to the septic leach fields serving structures on two parcels would be less than significant.

Impact Significance: Less than Significant; no mitigation required.

Impact 4.13.5: Mosquito Abatement. The Estuary Management Project could increase the frequency and duration of water levels in the Estuary during the lagoon management period, and would inundate vegetated areas adjacent to the existing shoreline. Increased inundation area could increase potential mosquito breeding habitat adjacent to the Estuary. (Less than Significant)

During the lagoon management period, Estuary water level is anticipated to be maintained between 7 and 9 feet for duration of as long as five months. As previously noted in Section 4.4, Biological Resources, water surface elevations of between 7 and 9 feet would inundate approximately 45 acres, consisting primarily of gravel bar/mudflat, freshwater marsh, and riparian scrub vegetation. These areas have been episodically inundated approximately 52 times since 1996. With increased duration of inundation, mudflat, Coastal and Valley Freshwater Marsh, and northern riparian/coastal scrub assemblages may convert or shift towards higher elevations (i.e., some additional wetland and riparian vegetation may grow above the managed surface water elevation because increasing groundwater levels would induce suitable conditions for the establishment of such vegetation, such as prolonged inundation or soil saturation during the growing season).

Mosquito breeding habitat is common to Estuary areas, and exists within the Estuary itself, along the shoreline at fluctuating water levels, within its tributaries, and on lands adjacent to the Estuary where standing water and vegetation provide breeding, egg laying, and larval development opportunities for mosquitoes. Although water surface elevations would be increased, conditions for mosquito breeding are not anticipated to be substantially altered from existing conditions within the Estuary as whole.

The Water Agency, in implementing the Estuary Management Project as required by NMFS, has in place both short-term measures to avoid impacts associated with creation and maintenance of the freshwater lagoon, as well as long-term monitoring programs that will allow for the review and determination of potential adverse effects associated with implementation of the Estuary Management Plan. It is anticipated that conditions resulting from the Estuary Management Plan would be consistent with the range of conditions currently experienced in the Estuary, and that its implementation would result in conditions that are more natural relative to observed conditions in other estuary systems on the West Coast. Therefore, potential impacts to mosquito control and abatement would be less than significant.

Impact Significance: Less than Significant; no mitigation required.

4.13.5 References

California Water Services Group (Cal Water), Redwood Valley District webpage, 2010, available online:

http://www.calwater.com/your_district/index.php?District=rv&Zip=&Submit=Click+to+show+your+district, accessed on April 21, 2010.

Russian River Fire Protection Department (RR FPD), Homepage, available online:

<http://www.russianriverfire.org/index.php>, accessed on April 21, 2010.

Russian River Utility (RRU), *Russian River County Water District*, 2007, available online:

<http://www.rruwater.com/russianRiverCounty.shtml>, accessed on April 21, 2010.

Sonoma County Department of Health Services, *Sonoma County Hospital Information Sheet, 2008 OSHPD Hospital Summary Data*, March 5, 2010.

Sonoma County Office of Education, *School Districts Map*, available online:

http://www.scoe.org/files/district_map.pdf, April 21, 2010.

Sonoma County Permits and Resources Management Department, *Sonoma County General Plan 2020*, Public Facilities and Services Element, adopted September 23, 2008.

Sonoma County Sheriff's Office, *Locations-Guerneville Substation and Zone Map*, May 2009, available online: http://www.sonomasheriff.org/contact_locations.php, accessed April 21, 2010.

Sonoma County Waste Management Agency, *Disposal Sites*, 2010, available online:

http://www.recyclenow.org/o_disposal.html, accessed on April 21, 2010.

Sonoma County Water Agency (SCWA), Letter to Mr. William Hearn, National Marine Fisheries Service Regarding Russian River Estuary Flood Risk Management Feasibility Study, March 22, 2010b.

Sonoma County Water Agency (SCWA), *Russian River County Sanitation District informational brochure*, available online: <http://www.drivecms.com/uploads/scwa.ca.gov/pdfs/FINAL.pdf>, accessed on April 21, 2010a.

Sonoma County Water Agency (SCWA), *Standard Operational Procedures, Russian River Mouth Opening*, November 1999, revised July 2010.

Sweetwater Springs Water District (SSWD), Homepage, 2008, available online:

<http://www.sweetwatersprings.com/index.htm>, accessed on April 21, 2010.