

6.0 IMPACT OVERVIEW

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6.1 GROWTH INDUCING IMPACTS

CEQA requires that an EIR discuss the ways in which a proposed project could foster population growth or the construction of additional housing in the vicinity of the project and how that growth would, in turn, affect the surrounding environment. Growth can be induced in a number of ways, by eliminating obstacles to growth, or by simulating economic activity within the region. For a general plan, however, the project is a long term plan intended to accommodate projected population, housing and employment growth, including the appropriate balance among these factors with the necessary public services and infrastructure.

The *Draft GP 2020* is a plan to accommodate future projected growth and development in the unincorporated area of Sonoma County. Projected growth is described in **Chapter 3.0 Project Description** and the environmental consequences related to the potential growth are fully assessed in **Chapter 4.0 Environmental Setting, Impacts, and Mitigation Measures**.

Land uses and development consistent with the *Draft GP 2020* would result in additional housing, agricultural, commercial, industrial, and public services and infrastructure development within the unincorporated area. For example, development consistent with the *Draft GP 2020* would result in approximately 7,300 additional housing units in the unincorporated area over existing conditions. However, the amount of additional growth that would be accommodated by the *Draft GP 2020* is essentially the same as the level of growth projected for the existing *General Plan*. So, while the *Draft GP 2020* would be growth inducing to the extent it would accommodate this growth it would not, in and of itself, serve to induce future growth within the unincorporated area of Sonoma County beyond what is currently anticipated. Furthermore, while the *Draft GP 2020* would accommodate this growth, implementation of the proposed goals, objectives and policies would manage this growth in ways that protect the environment and quality of life in Sonoma County.

The goals, objectives, and policies of the *Draft GP 2020* would not provide the stimulus for growth. For example, goal **LU-1** is to accommodate Sonoma County's fair share of future growth in the San Francisco Bay Area region as detailed in the Land Use Element consistent with environmental constraints, maintenance of the high quality of life enjoyed by existing residents, and the capacities of public facilities and services.¹ Objective **LU-1.1** is to correlate development authorized by the land use plan maps with projected population and employment growth. It is the County's objective to provide an adequate but not excessive supply of residential, commercial and industrial lands to accommodate the projected growth and to provide the appropriate balance between employment and housing.

Policies in the Public Facilities and Services Element would generally limit the expansion of water and sewer facilities to accommodate future land uses and development consistent with *Draft GP 2020*. Policies **PF-1f** and **PF-1h** would avoid the extension of public sewer and water service that is outside of either a sphere of influence adopted by LAFCO or an Urban Service Area with certain limited

¹ Projected population, household, and employment growth are shown in Tables LU-2, LU-5, and LU-6 of the Land Use Element.

exceptions. The exceptions require that the sewer or water facilities be sized to serve development consistent with the general plan. Policy **PF-1k** would permit the approval of new conventional or package sewage treatment plants under certain conditions. The intent of Policy **PF-1k** is that existing and future conventional and package sewage treatment plants would be sized to serve land uses and development consistent with the *GP 2020*.

Adoption of the *Draft GP 2020* would remove infrastructure limitations only to the extent necessary to accommodate planned growth. Adoption of the plan would not remove regulatory constraints that could result in future unforeseen growth. Moreover, adoption of the *Draft GP 2020* would concentrate urban land uses and development in Urban Service Areas. Therefore, while the *Draft GP 2020* could be said to induce some growth by accommodating planned growth, it would not be expected to have negative growth inducing impacts. Impacts associated with projected land uses and development consistent with the *Draft GP 2020* are analyzed in the appropriate sections throughout this EIR.

6.2 CUMULATIVE IMPACTS

Cumulative impacts refer to two or more individual effects that, when considered together, are considerable or which compound or increase other environmental impacts. The individual effects may be changes resulting from a single project or a number of separate projects. The cumulative impacts from several projects is the change in the environment that results from the incremental impacts of the project when added to other closely related past, present, and reasonably foreseeable future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time.²

In this context, cumulative impacts are those that, if added to the impacts of the *Draft GP 2020*, would increase the severity or the significance of impacts of the *Draft GP 2020*. By requiring an evaluation of cumulative impacts, CEQA attempts to identify environmental impacts which would be ignored due to the project-by-project nature of the project-level analyses contained in EIRs. If a significant cumulative impact is identified, the EIR considers whether the project's contribution to that impact is cumulatively considerable.

This EIR evaluates cumulative impacts under three scenarios. The first are cumulative impacts that would occur in the unincorporated area of Sonoma County under the *Draft GP 2020*. Each of the topical impact assessments in this EIR takes into consideration, where applicable, the cumulative impacts of the *Draft GP 2020*. For these cumulative analyses the geographic area of concern is the unincorporated area of Sonoma County. The analysis of cumulative impacts is, for the most part, limited to development pursuant to the *Draft GP 2020*. Since cumulative development in the unincorporated area is incorporated into the project description itself, the analyses contained in the body of this report take cumulative issues into consideration.

In addition to impacts that are cumulatively significant under the *Draft GP 2020*, there is an additional level of cumulative impact resulting from growth in the unincorporated portion of Sonoma County together with projected growth in each of the nine cities. With respect to some impacts, such as transportation, the analysis also includes growth in adjacent counties. For most of this cumulative analysis, the geographic area of concern is all of Sonoma County.

² CEQA Guidelines, Section 15355.

Third, this cumulative impact analysis identifies cumulative impacts that may occur as a result of alternative policy decisions available to the County’s decision makers as they consider the *Draft GP 2020*. As described **Chapter 5.0 Alternatives**, the alternatives are distinguished by different policy choices. For example, under Biological Resources, each alternative assumes adoption of different policies and programs, such as the policies regarding riparian corridors. Although a typical cumulative impact analysis would only examine the impact of the proposed project, this EIR provides an additional analysis of the cumulative impacts of these alternative policy choices. The purpose of this additional analysis is to inform the public and decision makers of the impacts of the decisions as early in the review process as possible.

The cumulative impact analysis incorporates the mitigation measures contained in the *Draft GP 2020* in the form of policies and programs. Rather than restating these policies in each impact section, the reader should refer to the project analysis in **Chapter 4.0 Environmental Setting, Impacts, and Mitigation Measures** for proposed policies or programs that reduce or avoid cumulative impacts related to the project. In addition, impact analysis presented in that chapter identifies additional mitigation measures that are available to reduce the impacts of the *Draft GP 2020*. These measures would also reduce the applicable cumulative impacts identified in this section and are referenced herein.

Exhibit 6.0-1 shows the existing population in 2000 and the projected population growth through 2020 for the county for each of the nine cities plus the unincorporated area.

Exhibit 6.0-1
Population Growth 2000 - 2020

Jurisdiction	Population	
	2000	2020
City of Cloverdale USA	7,052	11,200
City of Healdsburg USA	11,253	13,160
Town of Windsor USA	22,744	30,300
City of Santa Rosa USA	165,849	195,300
City of Sebastopol USA	8,108	9,620
City of Rohnert Park USA	42,236	50,400
City of Cotati USA	7,279	9,600
City of Petaluma USA	55,743	64,200
City of Sonoma USA	9,754	14,590
City subtotal	330,018	398,370
Unincorporated Sonoma County	128,596	147,660
Total	458,614	546,030

Source: *Sonoma County General Plan 2020 Public Hearing Draft*, PRMD, October 28, 2004.

The starting point for the population growth projections in the *Draft GP 2020* is *Projections 2002*.³ After a review of the projections and consultation with staff of each of the county's cities, the projections of total population were revised to match city general plans or estimates in Healdsburg, Santa Rosa, Sebastopol, Rohnert Park, and Sonoma.⁴ In the nine cities, growth is the result of both new development and annexations of existing development at the edges of the cities. Net population changes in unincorporated areas include losses due to these annexations as well as growth attributable to new development outside of the city Urban Service Areas.

The *Draft GP 2020* projects that the population in Sonoma County would increase from 458,614 in 2000 to 546,030 in 2020, an increase of 87,416 people. Sonoma County's total population within the cities would increase from 330,018 in 2000 to 398,370 residents in 2020, an increase of approximately 68,400 residents. City population would account for 73 percent of total county population. Within the unincorporated area of Sonoma County, the population would increase from 128,596 in 2000 to 147,660 residents in 2020, in increase of approximately 19,100 residents. Unincorporated population would account for 27 percent of total county population.

City growth, which represents most of the future growth in the county, has the potential to impact physical resources such as hydrology and water resources, biological resources, geology, and agricultural resources. For example it has the potential to impact water quality through increased erosion and sedimentation during project construction and also to result in increased runoff and streambank erosion due to changes to existing drainage patterns and increases in impervious surface areas. Another example would be in regard to biological resources. Growth within the cities has the potential to result in the loss of populations or essential habitat for special-status species, the loss of sensitive natural communities, or impacts to wetlands. In regard to agricultural lands, growth and expansion of the nine cities would contribute to the conversion of agricultural lands to non-agricultural uses. City growth would also require public services and infrastructure that may be located in the unincorporated area. For example, the Santa Rosa Subregional Wastewater System, the Sonoma County Water Agency Water Project, Sutter and Sonoma Valley Hospitals, and the SMART passenger rail and US 101 Widening projects primarily serve city growth. The contribution of city growth to impacts from such projects to physical resources cannot be quantified at this time, given the conceptual nature of where future services and infrastructure would be located in the unincorporated area. Nevertheless, given the scale of city growth it is reasonable to assume that such growth between now and 2020 would result in substantial impacts to the county's physical resources.

Growth within the cities and adjacent counties would also substantially contribute to increased traffic volumes on roadways within Sonoma County. The increase in traffic volumes would in turn contribute to an increase in roadway noise levels thus increasing the number of roadway segments adversely affected by noise. In addition to the growth in the cities and adjacent counties, the cumulative impact analysis includes the following "cumulative projects" that are not part of the proposed project, but are in various stages of entitlement. These projects are:

- Graton Rancheria Hotel and Casino
- Sonoma County Airport Master Plan
- Sonoma State University Faculty Housing Project

³ *Projections 2002*, Association of Bay Area Governments, December 2001.

⁴ *Sonoma County General Plan 2020 Public Hearing Draft*, Sonoma County PRMD, October 28, 2004, page 26.

It should be noted that these projects are not fully defined as yet, either in size or in location. It is not possible for the county to determine their site specific impacts, due to the evolving project descriptions. As a result, these impacts are analyzed only in general terms.

The cumulative considerations and impacts for each section are summarized below. For each impact area, the discussion below indicates whether cumulative development would have significant cumulative impacts to the environment and whether or not the *Draft GP 2020* would make a cumulatively considerable contribution to these impacts.

LAND USE, POPULATION, AND HOUSING

The cumulative development scenario for land use includes the development allowed under the *Draft GP 2020* together with development in the nine cities. Such growth, particularly in the cities, would result in significant cumulative land use, population, and housing impacts. However, as discussed in **Section 4.1 Land Use, Population and Housing**, land uses and development consistent with the *Draft GP 2020* would not induce substantial growth of population within the unincorporated portion of Sonoma County. Nonetheless, when viewed as a contributing factor to the more substantial growth projected to occur in the cities, the proposed project's incremental effects on growth and concentration of population, however small, would be cumulatively considerable.

As the unincorporated area together with the nine cities develop, land use conflicts between agricultural and residential / urban uses could intensify particularly at the fringe of the cities. Although most of this impact would result from city growth, land use and development in the unincorporated area would make a cumulatively considerable contribution to this impact.

Land use incompatibility resulting from additional land uses in the rural area is also identified as a significant impact resulting from the *Draft GP 2020*. Although city growth would not occur in the rural area and would not contribute to this impact, the cumulative projects would increase land use incompatibility. In this case, however, the contribution of the *Draft GP 2020* already would be significant and cumulatively considerable.

As described in **Chapter 5.0 Alternatives**, land use, population, and housing impacts under each of the alternatives are significant, although minor variations in policies and programs may result in fewer or greater impacts than under the *Draft GP 2020*. As a result, the cumulative impacts would be similar and significant. In addition, each alternative would result in a cumulatively considerable contribution to these impacts.

TRANSPORTATION

As described in **Section 4.2 Transportation**, a travel forecast model was used to prepare the traffic projections for this EIR. This modeling effort included both roadway and transit improvements and growth in the unincorporated area of Sonoma County, as projected under the *Draft GP 2020*, as well as projected growth in each of the nine cities and growth outside of Sonoma County. The regional traffic growth in the remainder of the Bay Area was based on information provided by ABAG's *Projections 2002*, the Metropolitan Transportation Commission, and the California Department of Finance (for counties not covered by ABAG). Therefore, the traffic analysis provided in **Section 4.2 Transportation** included cumulative development considerations.

Exhibit 4.2-14 shows those roadways that would have a significant impact in 2020 based on adoption and implementation of the *Draft GP 2020* including projected growth in the cities. Due to the uncertain nature and location of the cumulative projects, they were not included in the traffic model, although the Graton Rancheria Hotel and Casino was included in its earlier location on Stony Point Road. As indicated in **Exhibit 4.2-14** growth in the county's nine cities along with growth in the unincorporated area would result in unacceptable levels of service along 27 roadway links, including county and city roadways, State highways, and US 101. These are summarized below:

- Adobe Road west of Corona Road and east of Frates Road
- Arnold Drive north of Watmaugh Road and north of Verano Avenue
- Guerneville Road, east of Frei Road
- Main Street between Old Redwood Highway and Adobe Road, through the community of Penngrove
- Petaluma Boulevard North, North of Skillman Lane
- Petaluma Hill Road from Adobe Road to the Santa Rosa city limits
- Rohnert Park Expressway from Stony Point Road to the Rohnert Park city limits
- Highway 12 in several locations, primarily in the Sonoma Valley
- Highway 37 in several locations
- Highway 116 east of Adobe Road and west of Stony Point Road
- US 101, in several areas between Cotati to north of Windsor
- Highway 121 south of Highway 116 in the south Sonoma Valley

This congestion would also be significant at key intersections in the county and cities, particularly those identified in **Section 4.2 Transportation**. As discussed in that section, specific mitigation measures identified for each of these significant impacts may be infeasible. Impacts to the roadway and transit system would be a significant cumulative impact and implementation of the *Draft GP 2020* would make a cumulatively considerable contribution to these impacts.

As noted in **Section 4.2 Transportation**, there are additional mitigation measures available that would further reduce these significant cumulative impacts, namely through the construction of additional road and transit improvements. However, these improvements are not feasible due to lack of financial resources, their environmental impact, and the local community values.

As described in **Chapter 5.0 Alternatives**, transportation impacts are significant under each of the alternatives due to increased traffic. Each alternative includes variations in future road and transit improvements that would result in variations in the level of congestion on roadway segments and intersections and on the demand for transit services.

Therefore, cumulative traffic impacts under each alternative would be significant, and the contribution from each of the alternatives would be cumulatively considerable. However, the cumulative traffic congestion under the Mitigated Alternative would be less than that under the *Draft GP 2020*, due to the substantial additional road and transit improvements. In contrast, the cumulative traffic congestion under the No Project and Buildout Alternatives would be greater than under the *Draft GP 2020*, due to the relative lack of new improvements to the circulation system.

AIR QUALITY

As discussed in **Section 4.3 Air Quality**, the land uses and development consistent with the *Draft GP 2020* would result in a significant air quality impact related to the emission of ozone precursors,

odors / toxic air contaminants, and diesel emissions. Particulate emissions and aircraft emissions are identified as less-than-significant impacts.

Growth in the cities and the cumulative projects would contribute to all of these impacts, resulting in a significant cumulative impact on air quality, particularly for those impacts related to automobile traffic. Particulate emissions would increase as a result of wood stove emissions and construction dust in the cities. Aircraft emissions may increase as a result of the Airport Master Plan project, although the uncertain nature of this project's proposed airport operations at this time makes its impact speculative.

As a result, the cumulative air quality impacts would be significant and the *Draft GP 2020* contribution would be cumulatively considerable.

Section 4.3 Air Quality identifies additional policy mitigation measures that would further reduce the impacts of the *Draft GP 2020* related to ozone precursors, diesel truck emissions, and odors and toxic air contaminants. However, these measures would not reduce cumulative impacts to a less-than-significant level.

As described in **Chapter 5.0 Alternatives**, ozone precursor, odor / toxic air contaminant, and diesel emission impacts under each of the alternatives would be significant, although minor variations in policies and programs may result in fewer or greater impacts. As a result, the cumulative impacts would be similar and significant. In addition, each alternative would result in a cumulatively considerable contribution to these impacts.

NOISE

The analysis of noise impacts that are associated with auto and transit traffic are, in large part, based upon the traffic analysis which considers cumulative development in the unincorporated area of Sonoma County, the nine cities of Sonoma County, and adjacent counties as described above under Transportation. Future land uses and development within the county would result in potential cumulative noise level increases along certain roadway segments and transit routes such as SMART passenger rail. Cumulative impacts associated with these noise sources are significant and the *Draft GP 2020* would make a cumulatively considerable contribution to these cumulative noise impacts.

As described in **Chapter 5.0 Alternatives**, noise impacts related to vehicle and rail travel under each of the alternatives would be significant. As a result, the cumulative impacts of all of the alternatives would be significant, but the Mitigated Alternative would result in a greater cumulative noise impact than under the other alternatives due to its relatively greater commitment to road improvements and subsequent exposure of more uses to roadway noise. The cumulative impacts of the No Project Alternative and Buildout Alternative would be similar to the *Draft GP 2020*, as the added traffic on existing roadways would be offset by less new roads.

The Air Transportation Element (ATE) of the *Draft GP 2020* would allow increased general aviation and / or commercial operations at county airports. The levels permitted by the *Draft GP 2020* at the Sonoma County Airport would not expand existing noise contours nor increase the noise impact to noise-sensitive uses in surrounding areas, due to the existing ATE policies that limit the total number of annual aircraft operations. However, increased levels of commercial operations that may occur as a result of the update of the Sonoma County Airport Master Plan may increase noise impacts around that airport. The significance of this noise impact is unknown and speculative at this time.

Noise impacts resulting from stationary sources are identified as less-than-significant impacts under the *Draft GP 2020*. It is possible that new noise sensitive land use and development consistent with the *Draft GP 2020* could occur adjacent to existing noise generating land uses at the fringe of the cities, or that new noise generating land uses (e.g., the Graton Rancheria Hotel and Casino) could occur adjacent to noise sensitive uses at the fringe of the cities. Yet these cumulative impacts would also be less-than-significant due to the policies included in the *Draft GP 2020* that would address the noise impacts of new noise generating uses.

As described in **Chapter 5.0 Alternatives**, impacts related to noise sensitive land uses near noise impacted areas or new noise generating land use in noise impacted areas would not be significant under the Mitigated and No Project Alternatives. However, these impacts would be slightly greater under the Buildout Alternative due to its less restrictive policies and standards than under the *Draft GP 2020*. However, these less restrictive policies would only apply to exterior noise generated in urban areas resulting in a less-than-significant cumulative impact under this alternative.

HYDROLOGY AND WATER RESOURCES

Land uses and development consistent with the *Draft GP 2020*, together with development in the county's nine cities plus the cumulative projects, would result in cumulative hydrology and water resource impacts. As discussed in **Section 4.5 Hydrology and Water Resources**, land uses and development consistent with the *Draft GP 2020* would result in significant water quality, groundwater, drainage, and flooding impacts. For example, cumulative development in the unincorporated area plus the nine cities would increase demand on groundwater supplies, potentially adversely affecting groundwater conditions. Also, cumulative development would result in alterations to existing drainage patterns and in the placement of structures within 100-year flood hazard areas that could impede or redirect flood flows, resulting in secondary flood damage including bank instability and erosion. The cumulative projects may also contribute to the cumulative hydrologic and water resources impacts, including increased demand on groundwater supplies, alteration of drainage patterns, and increased impervious surfaces. Cumulative development would result in cumulative hydrology and water resource impacts. Land uses and development consistent with the *Draft GP 2020* would make a cumulatively considerable contribution to these cumulative hydrology and water resources impacts.

Section 4.5 Hydrology and Water Resources identifies additional policy mitigation measures that would further reduce the impacts of the *Draft GP 2020* related to water quality, groundwater, drainage, and flooding. However, these measures would not reduce cumulative impacts to a less-than-significant level.

As described in **Chapter 5.0 Alternatives**, hydrology and water resource impacts (e.g., water quality, groundwater, drainage, and flooding) under each of the alternatives would be significant, although variations in policies and programs may result in fewer or greater impacts than under the *Draft GP 2020*. As a result, the cumulative impacts under each alternative would also be significant. In addition, each alternative would result in a cumulatively considerable contribution to these impacts.

These cumulative impacts would be greater under the No Project and Buildout Alternatives because these alternatives would not benefit from all of the *Draft GP 2020* policies and programs in the Water Resources and Public Safety Elements and because these alternatives would result in more rural and / or urban land uses and development than would occur under the *Draft GP 2020*. Cumulative impacts would be fewer under the Mitigated Alternative due to its more restrictive policies and its relatively fewer land uses and development.

BIOLOGICAL RESOURCES

Land uses and development consistent with the *Draft GP 2020*, together with development in the county's nine cities and cumulative projects, would result in a significant loss of populations or essential habitat for special-status species and loss of sensitive natural communities. These would be significant cumulative impacts. Even with implementation of the proposed policies (as discussed in **Section 4.6 Biological Resources**), the *Draft GP 2020* would make a cumulatively considerable contribution to cumulative biological resources impacts.

The *Draft GP 2020* would not result in a significant impact to wetlands. However, wetlands within the areas planned for city expansion and in the locations of the cumulative projects may be affected. federal and State regulations, coupled with the *Draft GP 2020* policies, likely would reduce this impact to a less-than-significant level. In this case, the *Draft GP 2020* contribution to this cumulative impact would not be cumulatively considerable.

In addition, land uses and development consistent with the *Draft GP 2020*, together with development in the nine cities and the cumulative projects, would adversely affect wildlife habitat and result in the obstruction of wildlife movement opportunities. This would be a significant cumulative impact. Implementation of the *Draft GP 2020* would make a cumulatively considerable contribution to this cumulative biological resources impact.

As described in **Chapter 5.0 Alternatives**, biological resource impacts (e.g., to special status species, sensitive natural communities, wildlife habitat movement) under each of the alternatives would be significant, although variations in policies and programs may result in fewer or greater impacts than under the *Draft GP 2020*. As a result, the cumulative impacts under each alternative would be significant. In addition, each alternative would result in a cumulatively considerable contribution to these impacts.

These cumulative impacts would be greater under the No Project and Buildout Alternatives because these alternatives would not benefit from all of the *Draft GP 2020* policies and programs protecting biological resources, and because these alternatives would result in more rural and / or urban land uses and development than would occur under the *Draft GP 2020*. Cumulative impacts would be fewer under the Mitigated Alternative due to its more restrictive policies and its relatively fewer land uses and development.

Wetland impacts are identified as less-than-significant under the Mitigated Alternative and significant under the No Project and Buildout Alternatives due to different policies and the differences in land uses. However, since wetlands could be adversely affected by development in the expansion areas of some cities, wetland impacts would be cumulatively significant under the *Draft GP 2020* and each of the alternatives. As a result, for each alternative, the contribution of the alternative would be cumulatively considerable. These cumulative wetland impacts would be greater under the No Project and Buildout Alternatives than under the *Draft GP 2020* and they would be less under the Mitigated Alternative than under the *Draft GP 2020*.

GEOLOGY / SOILS

As discussed in **Section 4.7 Geology / Soils**, as population within the unincorporated area of Sonoma County together with the nine cities grows, including growth associated with the cumulative projects, so would the opportunity for geologic and soils hazards (e.g., seismic ground shaking, seismic related ground failure, landsliding, tsunamis and seiches, subsidence and settlement, and expansion of soils).

Implementation of the *Draft GP 2020* policies would reduce the danger from these hazards, however; this would be a significant cumulative impact. In addition, the *Draft GP 2020* contribution to these impacts would be cumulatively considerable. **Section 4.7 Geology / Soils** identifies an additional policy mitigation measure that would further reduce the impacts of the *Draft GP 2020* related to seismic ground shaking. However, this measure would not reduce cumulative impacts to a less-than-significant level.

In addition to the above impacts from geologic and soils hazards, land uses and development under the *Draft GP 2020* would have significant soil erosion impacts. Development within the cities and cumulative projects would contribute to this erosion to the extent that any projects are not subject to discretionary project review. This would result in a significant cumulative impact for which the *Draft GP 2020* contribution would be cumulatively considerable. Mineral resource and septic suitability impacts would not be exacerbated by development in the cities or the cumulative projects and no cumulative impact would occur.

As described in **Chapter 5.0 Alternatives**, geology and soil impacts under each of the alternatives would be significant, although minor variations in policies and programs may result in fewer or greater impacts than under the *Draft GP 2020*. Cumulative impacts under each alternative would be similar and significant. In addition, each alternative would result in a cumulatively considerable contribution to these impacts.

AGRICULTURAL AND TIMBER RESOURCES

As discussed in **Section 4.8 Agricultural and Timber Resources**, conversion of agricultural land can occur in two ways. First, cities and unincorporated urban areas may grow outward, resulting in loss of farmland on the fringes of these areas. Second, in rural areas, agricultural lands that are currently available for production may be lost to processing and support uses and other rural uses allowed by agricultural zoning. Conversion of agricultural land resulting from the outward expansion of the cities and unincorporated urban areas is identified as a less-than-significant impact due to the existence of city and *Draft GP 2020* policies limiting the extent of such expansions. For the same reasons, this impact is not considered to be a significant cumulative impact.

Loss of agricultural production due to increased processing and support uses, and agricultural tourism or other rural uses, including habitat protection, would not result from growth of the cities or unincorporated urban areas, and would not likely result from the cumulative projects unless the Sonoma State faculty housing project goes forward on agricultural land. Nonetheless, given the extent of agriculturally protected land in the county, this cumulative impact would be less-than-significant.

As described in **Chapter 5.0 Alternatives**, loss of agricultural land due to conversion to urban uses or to agricultural support and tourism uses under each of the alternatives are less-than-significant, although variations in policies and programs may result in fewer or greater impacts. Cumulative impacts of the project alternatives would also be less-than-significant for the reasons described above. These less-than-significant cumulative impacts would be similar to but slightly greater than under the *Draft GP 2020* with the No Project and Buildout Alternatives due to their less restrictive policies affecting agricultural support and agricultural tourism uses and the likelihood that more rural land uses would occur. Conversely, the more restrictive agricultural processing policies under the Mitigated Alternative would result in relatively less use of productive agricultural land for these uses.

The cumulative loss of agricultural land as a result of biotic habitat protection policies would be greater under the Mitigated Alternative and less under the No Project and Buildout Alternatives due to the differences in Riparian Corridor and Critical Habitat policies in these alternatives.

Timberland conversions that have occurred in Sonoma County from 1989 through 2004 have all occurred in the unincorporated area.⁵ Cumulative development within the nine cities would not result in a significant cumulative timberland conversion impact. For the same reason, there would not be a significant cumulative timberland conversion impact under any of the project alternatives.

PUBLIC SERVICES

Cumulative impacts to public services are discussed below.

Water Supply Services

Current and projected water supplies are discussed in *Section 4.9 Public Services*. Some of the unincorporated USAs receive water from the Sonoma County Water Agency (SCWA) while others are dependent upon surface water or groundwater for water supply. Most new land uses and development in the unincorporated area outside of the USAs, would be dependent on groundwater, as would the majority of new irrigation agriculture. Land uses and development consistent with the *Draft GP 2020*, together with development in the nine cities and the cumulative projects, would result in an increased demand on surface water and groundwater supplies. Future increases in water demand would result from increases in both population growth and agricultural and other rural uses.

As noted in *Section 4.9 Public Services*, available future water supplies vary by water provider and by source. For example, surface water supplies for the SCWA system are considered adequate to accommodate demand for those jurisdictions that contract with the SCWA. However, expansion of the delivery system, approval of the Water Project, and obtaining additional water rights must be completed before the available supply can be delivered.

On the other hand, future supplies for cities, districts, and individuals that rely upon groundwater is less certain, and often single water sources are utilized by multiple water users. The *Draft GP 2020* includes numerous policies and programs that would result in comprehensive assessment and management of water sources. However, in light of the current uncertainty regarding the availability of water supplies, this would be a significant cumulative impact and the *Draft GP 2020's* contribution is cumulatively considerable.

This increased demand for water supplies would result in the need for new water supply facilities. As noted above, additional water rights and new facilities would be needed in order for the SCWA to fulfill the water demand from its contractors. Similarly, other water providers serving individual users and urban and rural communities may need new or expanded facilities to serve planned growth. The construction of these facilities may result in significant cumulative environmental impacts, depending upon their location. The construction of these facilities, necessary to serve land uses and development consistent with the *Draft GP 2020* would be cumulatively considerable.

⁵ Nichols • Berman communication with David Schiltgen, Planner III, Sonoma County PRMD, January 2005.

As described in *Chapter 5.0 Alternatives*, water supply service impacts under each of the alternatives would be significant. Cumulative impacts under each alternative would also be significant, and each alternative would result in a cumulatively considerable contribution to these impacts. Cumulative demand for water supplies and facility needs under the No Project and Mitigated Alternatives would be less than under the *Draft GP 2020*. Neither of these alternatives would include new affordable housing sites that would increase water demand in some urban areas. In addition, the Mitigated Alternative would not provide for expansion of wastewater facilities that would be necessary to accommodate additional urban land uses and development, thereby reducing water demand. Cumulative demand and facility needs under the Buildout Alternative would be greater than under the *Draft GP 2020* due primarily to the additional land uses and development and the increased usage of package treatment plants.

Wastewater Management Services

As discussed in *Section 4.9 Public Services*, cumulative land uses and development under the *Draft GP 2020*, in the cities, and the cumulative projects could generate wastewater flows that may exceed the treatment capacity of wastewater treatment services in the cities and unincorporated area. This demand may require both construction of new facilities and improvements to existing facilities in the cities and /or in the unincorporated area. In turn, construction of such facilities could result in site-specific impacts. These would be significant cumulative impacts. Land uses and development consistent with the *Draft GP 2020* would make a cumulatively considerable contribution to the increased demand for wastewater services and the need for new or expanded wastewater treatment facilities.

This increased demand for wastewater services would result in the need for new wastewater facilities. As noted above, new facilities would be needed for various providers in order to fulfill the demand from the service areas. Similarly, other wastewater providers serving cities may need new or expanded facilities to serve planned growth. The construction of these facilities may result in significant cumulative environmental impacts in the unincorporated area depending upon their location. The construction of the facilities necessary to serve land uses and development under the *Draft GP 2020* would make a cumulatively considerable contribution to the cumulative impact.

As described in *Chapter 5.0 Alternatives*, wastewater management service impacts under each of the alternatives would be significant. Cumulative impacts under each alternative would also be significant, and each alternative would result in a cumulatively considerable contribution to these impacts.

Cumulative wastewater service demand and facility needs under the No Project and Mitigated Alternatives would be less than those under the *Draft GP 2020*. Neither of these alternatives would include new affordable housing sites. Since the Mitigated Alternative does not include wastewater facility expansion, the service demand would remain high, but the impacts of facility construction would not occur.

Cumulative wastewater demand and facility needs under the Buildout Alternative would be greater than those under the *Draft GP 2020* due primarily to the additional land uses and development and the increased usage of package treatment plants.

Solid Waste Management

As discussed in *Section 4.9 Public Services*, land uses and development consistent with the *Draft GP 2020*, together with development in the nine cities and the cumulative projects, would generate solid

waste streams that exceed the disposal capacity of the Sonoma County Central Landfill by 2015. Delayed expansion projects, and the potential infeasibility of recommended projects contained in the Countywide Integrated Waste Management Plan (CoIWMP) means that future landfill capacity is uncertain, resulting in a significant cumulative impact on these services. Land uses and development consistent with the *Draft GP 2020* would make a cumulatively considerable contribution to this solid waste management impact.

Mitigation Measure 4.9-6 would further reduce the impacts of the *Draft GP 2020* related to solid waste management services. However, this measure would not reduce cumulative impacts to a less-than-significant level.

As described in *Chapter 5.0 Alternatives*, solid waste management impacts under each of the alternatives would be significant. Cumulative impacts under each alternative would also be significant and each alternative would result in a cumulatively considerable contribution to these impacts.

Since solid waste disposal demand and facility needs are similar to those of the *Draft GP 2020*, the No Project and Mitigated Alternatives would result in similar cumulative impacts. However, the additional land uses and development that would occur under the Buildout Alternative would result in a greater cumulative impact than under the *Draft GP 2020*.

Parks and Recreation Services

As discussed in *Section 4.9 Public Services*, growth in the unincorporated area of Sonoma County plus the nine cities and the cumulative projects would require a total of 8,190 acres of Regional Open Space Parks and 2,730 acres of Community and Regional Parks. This would be an increase of 5,085 acres of Regional Open Space Parks and 1,549 acres of Community and Regional Parks over existing parklands in 2001. In order to meet this demand, additional park and recreational facilities would need to be planned and constructed. Since adequate funding for enough facilities to meet this demand is uncertain, the cumulative impact on parks and recreation would be significant, and the contribution of the *Draft GP 2020* would be cumulatively considerable. However, Sonoma County is currently considering a Draft Outdoor Recreation Plan (ORP).⁶ The *Draft ORP* proposes increases in parklands that would meet the cumulative demand for parks and recreation services. If adopted and implemented, a Draft Outdoor Recreation Plan may result in sufficient increases in parklands to meet the cumulative demand for parks and recreation services

The construction of park and recreation facilities could result in significant site specific environmental impacts depending upon the nature and location of each facility. These impacts could be cumulatively significant and the contribution of the *Draft GP 2020* would be cumulatively considerable.

As described in *Chapter 5.0 Alternatives*, park and recreation impacts under each of the alternatives would be significant. Cumulative impacts under each alternative would also be significant, and each alternative would result in a cumulatively considerable contribution to these impacts. Since parks and recreation services demand and facility needs are similar to *Draft GP 2020*, the No Project Alternative and Mitigated Alternative would result in similar cumulative impacts. However, the additional land uses and development that would occur under the Buildout Alternative would result in a greater impact than under the *Draft GP 2020*.

⁶ *Draft Sonoma County Outdoor Recreation Plan*, Sonoma County Regional Parks Department, March 2003.

Public Education Services

As discussed in *Section 4.9 Public Services*, projections for K-12 students in Sonoma County by the State Department of Finance are expected to decline from 72,597 students in 2003 / 2004 to 71,548 students in 2009 / 2010 before increasing slightly to 72,555 students in 2012 / 2013. Projections beyond 2012 / 2013 are not available. The majority of the student projections derive from existing and future population growth in the cities. Development consistent with the *Draft GP 2020* combined with that of the cumulative projects and the cities would result in a significant cumulative impact on public education services and the need for new school facilities. However, land uses under the *Draft GP 2020* would not generate enough students to increase this demand and would not result in the need for new or expanded public schools. Therefore it would not make a cumulatively considerable contribution to the impact to public education services and facilities.

As described in *Chapter 5.0 Alternatives*, public education services impacts would be significant under the Buildout Alternative and less-than-significant under the *Draft GP 2020* and the No Project and Mitigated Alternatives. This difference is due to the additional land uses and development that would occur under the Buildout Alternative. This additional development could, in combination with the growth in the cities and the cumulative projects, result in student populations that might trigger additional facility needs and related construction that would be a significant cumulative impact. In this case, the Buildout Alternative contribution to this cumulative impact would be cumulatively considerable.

Cumulative impacts on public education services and facility needs would be significant within the cities under the No Project and Mitigated Alternatives due to the growth in student population. However, land uses in the unincorporated area would not generate enough students to increase the demand or need for new facilities. As a result, these alternatives would not make a cumulatively considerable contribution to this impact.

Fire Protection and Emergency Services

As discussed in *Section 4.9 Public Services*, land uses and development consistent with the *Draft GP 2020*, together with development in the nine cities and the cumulative projects, would result in a significant cumulative demand for increased fire protection and emergency services facilities. Although several of the cities (i.e., Cloverdale, Healdsburg, Petaluma, Santa Rosa, Sebastopol, and Sonoma) operate independent fire departments the typical response to an emergency call within Sonoma County generally requires the dispatch of multiple agencies in all areas outside the City of Santa Rosa.⁷ Land uses and development consistent with the *Draft GP 2020* would make a cumulatively considerable contribution to the demand for additional fire protection and emergency services facilities as well as to impacts related to the construction of new facilities.

Mitigation Measure 4.9-10 would further reduce the impacts of the *Draft GP 2020* related to fire hazards. However, this measure would not reduce cumulative impacts to a less-than-significant level.

As described in *Chapter 5.0 Project Alternatives*, fire protection and emergency services and facility needs impacts under each of the alternatives would be significant, although minor variations in policies and programs may result in fewer or greater impacts. Cumulative impacts under each

⁷ Nichols • Berman communication with Vern Losh, Director, and Jack Rosevear, Fire Marshall, Department of Emergency Services, September 2004.

alternative would also be significant, and each alternative would result in a cumulatively considerable contribution to these impacts.

These cumulative impacts would be greater under the No Project and Buildout Alternatives than under the *Draft GP 2020*. The primary reason is that these alternatives would not benefit from the more aggressive fire protection policies in the *Draft GP 2020*. In addition, the Buildout Alternative would result in more urban and rural development requiring fire and emergency protection. Cumulative impacts under the Mitigated Alternative would be less than under the *Draft GP 2020* due to reduced rural land uses and more stringent fire service policies.

Criminal Justice Services

As discussed in *Section 4.9 Public Services*, cumulative development within the cities and the cumulative projects would contribute to the increased demand for new or expanded Sheriff's Department substations, detention facilities, and other criminal justice facilities. The construction of these facilities could result in significant environmental impacts, depending upon their location. This would be a significant cumulative impact. Land uses and development under the *Draft GP 2020* would make a cumulatively considerable contribution to this demand for additional criminal justice facilities, and to the impacts associated with their construction.

As described in *Chapter 5.0 Alternatives*, criminal justice services and facility needs impacts under each of the alternatives would be significant, although minor variations in policies and programs may result in fewer or greater impacts. Cumulative impacts under each alternative also would be significant and each alternative would result in a cumulatively considerable contribution to these impacts. These cumulative impacts would be similar to those of the *Draft GP 2020* under the No Project Alternative due to similar policies and land uses and development. Under the Buildout Alternative, the demand for criminal justice services and facilities would be greater than under *Draft GP 2020* due to the additional land uses and development that would occur. Demand for new facilities would be less under the Mitigated Alternative due to the reduced level of rural uses that would occur.

Library Services

As discussed in *Section 4.9 Public Services*, land uses and development consistent with the *Draft GP 2020* together with development in the county's nine cities and the cumulative projects would result in an increased demand for new or expanded County library facilities in order to maintain acceptable service levels. The construction of these facilities could result in significant environmental impacts, depending on their location. This would be a significant cumulative impact. The *Draft GP 2020* would make a cumulatively considerable contribution to the demand for additional library services.

As described in *Chapter 5.0 Alternatives*, library services and facility needs impacts under each of the alternatives would be significant, although minor variations in policies and programs may result in fewer or greater impacts. Cumulative impacts under each alternative would also be significant, and each alternative would result in a cumulatively considerable contribution to these impacts. These cumulative impacts would be similar those of the *Draft GP 2020* under the No Project Alternative due to similar policies and land uses and development. Under the Buildout Alternative, the demand for library services and facilities would be greater than under the *Draft GP 2020* due to the additional land uses and development that would occur under that alternative. Demand for new facilities would be less under the Mitigated Alternative due to the reduced level of rural uses that would occur.

Human Services

As discussed in *Section 4.9 Public Services*, land uses and development consistent with the *Draft GP 2020*, together with development in the cities and the cumulative projects would increase the demand for human services and result in significant cumulative impacts from construction of new or expanded human service facilities. Development consistent with the *Draft GP 2020* would make a cumulatively considerable contribution to this demand and to the construction-related impacts.

As described in *Chapter 5.0 Alternatives*, human services and facility needs impacts under each of the alternatives would be significant although minor variations in policies and programs may result in fewer or greater impacts. Cumulative impacts under each alternative would also be significant, and each alternative would result in a cumulatively considerable contribution to these impacts. These cumulative impacts would be similar to the *Draft GP 2020* under the No Project Alternative due to similar policies and land uses and development. Under the Buildout Alternative, the demand for human services and facilities would be greater than under the *Draft GP 2020* due to the additional land uses and development that would occur. Demand for new facilities would be less under the Mitigated Alternative due to the reduced level of rural uses that would occur.

CULTURAL RESOURCES

The cultural resources analysis considers all land uses and development within the unincorporated area of Sonoma County, the nine cities, the cumulative projects, and the cumulative impacts of such growth on cultural resources. Impacts to cultural resources are typically limited to the proximity of development, thus growth within the boundaries of the nine cities and the cumulative projects could increase the severity of impacts to cultural resources from cumulative development pursuant to the *Draft GP 2020*. Consistent with the *Draft GP 2020*, project sponsors would be required to take appropriate measures to protect or preserve cultural resources affected by individual projects. This would reduce the impacts of cumulative development on these resources. However, many land uses and development do not require permits which would subject them to review and mitigation. Therefore, this would be a significant cumulative impact. The contribution of the *Draft GP 2020* would be cumulatively considerable.

As described in *Chapter 5.0 Alternatives*, cultural resource impacts under each of the alternatives would be significant and policies and programs are the same under each alternative. Cumulative impacts under each alternative would also be similar and significant, and each alternative would result in a cumulatively considerable contribution to these impacts.

Section 4.10 Cultural Resources identifies additional policy mitigation measures that would further reduce the impacts of the *Draft GP 2020* and its alternatives related to historic, archaeological, and paleontological resources. However, these measures would not reduce cumulative impacts to a less-than-significant level.

VISUAL RESOURCES

Land uses and development consistent with the *Draft GP 2020* could impact the visual quality of Community Separators, Scenic Landscape Units, Scenic Corridors and Scenic Highways. As discussed in *Section 4.11 Visual Resources*, policies contained in the *Draft GP 2020* and the Sonoma County Code would continue to strictly limit the intensity, density, and location of development within these areas. Land uses and development consistent with the *Draft GP 2020*, therefore, would not

result in significant visual impacts on these lands. Land uses and development within the nine cities plus the cumulative projects could combine with the *Draft GP 2020* to increase the severity of impacts to visual quality within the Community Separators, Scenic Landscape Units, Scenic Corridors, and Scenic Highways. However, the impact from the cities would be limited to portions of Scenic Corridors and Scenic Highways on the fringe of cities. As a result, the cumulative impacts would be less-than-significant.

Land uses and development from the *Draft GP 2020*, the nine cities, and the cumulative projects would result in a significant cumulative impact in the visual quality of county lands that are not designated Scenic Resources, including impacts from light pollution. This impact could be particularly significant in areas where development in a city and the county are located such that the visual quality of development and light pollution are combined. Although policies and programs in the *Draft GP 2020* would reduce these impacts, these impacts would still be cumulatively considerable.

As described in *Chapter 5.0 Alternatives*, the visual impacts of the *Draft GP 2020* and each of the alternatives differ depending upon the policies and programs and extent of land uses and development that would occur. As a result, the cumulative impacts resulting from the implementation of each alternative also differ. The No Project Alternative would combine with cities and cumulative projects and result in a less-than-significant cumulative impact on visual resources within designated scenic resource areas. The policies under the No Project Alternative would provide visual protection of these areas that would be similar to that of the *Draft GP 2020*. Rural land uses would be slightly greater than under the *Draft GP 2020*, resulting in a slightly greater visual impact, but the impact would remain less-than-significant.

However, cumulative visual impacts under the Buildout Alternative would be significant and this alternative would make a cumulatively considerable contribution to visual impacts in scenic resource areas. The additional land uses and development that would occur under this alternative, coupled with the less restrictive visual protection policies and the impacts of city development near designated scenic resources are the main reason that this impact would be significant and would be greater than the cumulative impacts under the *Draft GP 2020*.

Similar to the *Draft GP 2020* and the No Project Alternative, cumulative visual impacts in scenic resource areas would be less-than-significant under the Mitigated Alternative. Development standards would be more restrictive than under the *Draft GP 2020* and rural uses would be fewer in these areas, resulting in greater protection of visual quality.

As described in *Chapter 5.0 Alternatives*, cumulative visual impacts in areas that are not designated as scenic resources also differ under each alternative, depending upon the policies and programs and extent of land uses and development that would occur. Cumulative visual impacts in these areas would be significant under the No Project Alternative and Buildout Alternative due to the lack of lighting and glare, urban design, and rural character policies. The Buildout Alternative would also result in more development. As a result, the contribution of these alternatives to visual impacts would be cumulatively considerable and these cumulative impacts would be greater than under the *Draft GP 2020*.

The Mitigated Alternative, however, would result in a less-than-significant cumulative visual impact because it would include greater visual protection under the above policies. In addition, this alternative would include more land designated as scenic resources and subject to development standards protecting visual quality than would the *Draft GP 2020*. As a result, these cumulative impacts would be less-than-significant and less than under the *Draft GP 2020*.

ENERGY

As discussed in *Section 4.12 Energy*, land uses and development consistent with the *Draft GP 2020* could substantially increase the demand for and consumption of energy resources. Although energy impacts related to land use patterns, energy efficiency in new construction and building retrofits, would be less-than-significant, the increased demand for energy as a result of future land uses and development consistent with the *Draft GP 2020* would be significant. Cumulative development in the cities and cumulative projects would result in a significant cumulative increase in the demand for energy and the *Draft GP 2020* would make a cumulatively considerable contribution to this impact.

As described in *Chapter 5.0 Alternatives*, energy impacts resulting from land use patterns and construction would be less-than-significant under each alternative. The only exception is under the Buildout Alternative where the additional construction would result in a significant impact. However, energy demand as a result of future land uses and development in the cities and cumulative projects would be significant under all three alternatives and each of the alternatives would make a cumulatively considerable contribution to the impact. The No Project Alternative and the Buildout Alternative would result in greater cumulative energy demand impacts than under the *Draft GP 2020* due to the less aggressive energy conservation policies and the greater amount of rural land uses. The Mitigated Alternative would result in a similar, but slightly less cumulative energy demand due to the reduced rural and urban land uses than under the *Draft GP 2020*.

HAZARDOUS MATERIALS

As discussed in *Section 4.13 Hazardous Materials*, land uses and development consistent with the *Draft GP 2020* would result in a significant impact related to hazardous materials near school sites. Otherwise, hazardous materials impacts under the *Draft GP 2020* would not be significant. City and cumulative project land uses and development could result in additional transport and / or release of hazardous materials in the unincorporated area, and would result in an increased likelihood that the location of hazardous materials uses could occur near schools in the county. Similarly, hazardous materials generated in the county could be released in the cities and / or hazardous materials sites could be located near city schools.

Existing regulations and the *Draft GP 2020* policies and programs would reduce the cumulative impacts associated with release / transport of hazardous materials to a less-than-significant cumulative impact. However, the potential for location of hazardous materials uses near school sites would remain cumulatively significant and the *Draft GP 2020* contribution would be cumulatively considerable. The additional policy mitigation measures identified in *Section 4.13 Hazardous Materials* would reduce the contribution of the *Draft GP 2020* to a less than cumulatively considerable level, because hazardous materials uses near school sites would be partially addressed as part of County development review. However, the cumulative impact would remain significant.

As described in *Chapter 5.0 Alternatives*, the hazardous materials impacts of the alternatives are similar to those under the *Draft GP 2020*. Each alternative would have a less-than-significant impact regarding the release / transport of hazardous materials in general and near airports. In addition, each alternative would have a significant impact regarding the location of hazardous materials uses near school sites, and each would make a cumulatively considerable contribution to this impact. For the reasons described above, all of the alternatives would result in a significant cumulative impact regarding hazardous materials near school sites.

The No Project Alternative and the Buildout Alternative would result in a slightly greater cumulative impact regarding this impact than under the *Draft GP 2020*, due to the lack of policies and greater amount of rural land uses and / or development. The Mitigated Alternative would have a similar cumulative impact to that of the *Draft GP 2020* due to its similar policies. The fewer land uses under this alternative likely would not affect the specific demand for hazardous materials sites.

In the case of each of these alternatives, additional policy mitigation measures identified in **Section 4.13 Hazardous Materials** could be adopted that would reduce the alternative's contribution to this cumulative impact to a less-than-significant level.

6.3 SIGNIFICANT UNAVOIDABLE IMPACTS

This section identifies project impacts that could not be eliminated or reduced to a less-than-significant level by mitigation measures that are part of the *Draft GP 2020* or other mitigation measures recommended in this EIR. These impacts are described in detail in **Chapter 4.0 Environmental Setting, Impacts, and Mitigations Measures**.

4.1-2 Land Use Conflicts between Agricultural and Residential / Urban Uses

Implementation of the *Draft GP 2020* would result in the intrusion of residential uses into agricultural areas thereby exposing residents to noise, odors, dust, and similar nuisances associated with agricultural operations. Such residential development may be incompatible with agricultural operations. Urban uses at the fringe of cities and the unincorporated communities may also encounter these agricultural operations. Both residential intrusion and urban uses at the fringe may result in land use conflicts and land use incompatibility. While the *Draft GP 2020* and the Sonoma County Code contain policies and ordinances to reduce this impact, this would be a significant impact.

4.1-3 Incompatible Land Uses in the Rural Area

Land uses and development consistent with the *Draft GP 2020* would result in changes in land use type, density, and scale within rural areas and generate land use incompatibilities. While policies and programs contained in the *Draft GP 2020* would reduce such incompatibilities, this would be a significant impact.

4.2-1 Congestion on Local County and City Roadway Segments

Land uses and development consistent with the *Draft GP 2020*, the cities, and implementation of proposed transportation improvements would result in unacceptable LOS along several local city and county roadways.

4.2-2 Congestion on State Highways

Land uses and development consistent with the *Draft GP 2020* and implementation of proposed transportation improvements would result in unacceptable LOS along several locations on State Highways.

4.2-3 Congestion on Portions of US 101 in Several Areas between Cotati to north of Windsor

Land uses and development consistent with the *Draft GP 2020* and implementation of proposed transportation improvements would result in unacceptable LOS along portions of US 101.

4.2-4 Congestion at Key Intersections throughout the County

Land uses and development consistent with the *Draft GP 2020* and implementation of proposed transportation improvements would result in unacceptable LOS at several key intersections.

4.3-1 Increased Emissions of Ozone Precursors

Land uses and development consistent with the *Draft GP 2020* would result in increased emissions of ozone precursors resulting primarily from vehicles. The increase of emissions within the NSCAPCD would be a less-than-significant impact. However, within the jurisdiction of the BAAQMD, the increased emissions would exceed the District's Clean Air Plan thresholds.

4.4-1 Increased Traffic Noise

Land uses and development consistent with the *Draft GP 2020* would result in increased traffic which in turn would result in a significant increase in noise along certain roadway segments.

4.4-3 Increased Rail Noise

Existing noise sensitive land uses could be exposed to substantially increased noise levels from rail activity.

4.5-3 Water Quality – Agricultural and Resource Development Uses

Agricultural and resource development (i.e., timber harvesting and mineral resources extraction) land uses consistent with the *Draft GP 2020* could result in an increase in sediment and nutrients in downstream waterways.

4.5-5 Groundwater Level Decline

Land uses and development consistent with the *Draft GP 2020* would increase demand on groundwater supplies and could therefore result in the decline of groundwater levels.

4.5-7 Well Competition and Adverse Well Interference

Land uses and development consistent with the *Draft GP 2020* could result in an increase in the number of private wells in unincorporated areas of the county. Approval of wells in Class I or Class II areas could result in well interference impacts.

4.5-8 Changes to Drainage Patterns Leading to Streambank Erosion

Land uses and development consistent with the *Draft GP 2020* would result in alterations to existing drainage patterns. Such changes would increase erosion, both in overland flow paths and in drainage swales and creeks.

4.5-11 Impede or Redirect Flows in Flood Hazard Areas

The placement of land uses and development, particularly structures, within 100-year flood hazards areas, could impede or redirect flood flows, resulting in secondary flood damage including bank instability and erosion.

4.6-1 Special Status Species

Land uses and development consistent with the *Draft GP 2020*, could result in loss of populations or essential habitat for special-status species.

4.6-2 Sensitive Natural Communities

Land uses and development consistent with the *Draft GP 2020* could result in loss of sensitive natural communities.

4.6-4 Wildlife Habitat and Movement Opportunities

Land uses and development consistent with the *Draft GP 2020* would result in a reduction of existing wildlife or fish habitat, contribute to habitat fragmentation, and result in obstruction of movement opportunities. Aspects of the applicable policies contained in the *Draft GP 2020* would serve to partially address these impacts, but the conversion, fragmentation, and obstruction would be a significant impact.

4.7-1 Seismic Ground Shaking

Land uses and development consistent with the *Draft GP 2020* would expose people or structures to substantial adverse seismic effects, including the risk of loss, injury, or death involving strong seismic groundshaking.

4.7-2 Seismic Related Ground Failure

Land uses and development consistent with the *Draft GP 2020* would expose people or structures to potential substantial adverse seismic effects, including the risk of loss, injury, or death from seismic-related ground failures such as surface fault rupture, lateral spreading, lurching, differential settlement, and flow failures. While the policies included in the *Draft GP 2020* would reduce most impacts to an acceptable level, seismic related ground failure impacts related to roads, public facilities, and other County projects would remain significant.

4.7-3 Landsliding

Land uses and development consistent with the *Draft GP 2020* would expose people and structures to substantial damaging effects of landsliding, including the risk of loss, injury, or death from down slope earth movement that may be slow or rapidly occurring. This kind of geologic hazard can be caused by earthquake, seasonal saturation of the soils and rock materials, erosion, or grading activities.

4.7-4 Subsidence and Settlement

Land uses and development consistent with the *Draft GP 2020* could expose property and structures to the damaging effects of ground subsidence hazards. This kind of geologic hazard can be seismically triggered (liquefaction), caused by seasonal saturation of the soils and rock materials, or caused by grading activities.

4.7-5 Tsunamis and Seiches

Land uses and development consistent with the *Draft GP 2020* could expose people and structures in limited areas of the county to potential, substantial adverse seismically caused flooding and strong tidal effects, including the risk of loss, injury, or death. While the policies included in the *Draft GP 2020* would reduce impacts to an acceptable level, tsunami and seiche impacts related to roads, public facilities, and other County projects would be significant.

4.7-6 Soil Erosion

Erosion can result in the loss of agricultural soil resources, as well as expose improvements to erosion-related damage such as undermining and settlement, and in severe cases can progress to landsliding.

4.9-1 Insufficient Water Supplies to Meet the Future Water Demand of the Urban Service Areas

Land use and development consistent with the *Draft GP 2020* would increase the demand for water. As a result, insufficient water supplies would be available to serve some of the unincorporated USAs from existing entitlements. New or expanded entitlements would be required.

4.9-2 Insufficient Water Supplies to Meet the Future Water Demand of Rural Private Domestic, Small Municipal, and Agricultural Wells.

Land uses and development consistent with the *Draft GP 2020* would result in an increased demand on groundwater supplies for rural uses. Due to the lack of comprehensive information regarding the county's groundwater resources, it is uncertain if groundwater supplies would be sufficient to meet the future demand of rural private domestic, small municipal, and agricultural wells. This uncertainty combined with the current regulatory approach could result in insufficient groundwater supplies in rural areas of the county.

4.9-3 New or Expanded Water Supply Facilities

Land Uses and development consistent with the *Draft GP 2020* could result in the need for increased water supply facilities, either through the construction of new facilities or through the expansion or retrofitting of existing facilities. Construction of new or expanded water supply facilities could result in site-specific impacts, especially on aquatic organisms and fisheries.

4.9-4 Increased Wastewater Treatment Demand

Land uses and development consistent with the *Draft GP 2020* would generate wastewater flows that exceed treatment capacity of wastewater treatment services and would require both construction of new facilities and improvements to existing facilities.

4.9-5 New or Expanded Wastewater Facilities

Land uses and development consistent with the *Draft GP 2020* could result in the need for increased wastewater facilities, either through the construction of new facilities or through the expansion or retrofitting of existing facilities. Construction of these facilities could result in site-specific impacts.

4.9-6 Increased Solid Waste Disposal Demand

Land uses and development consistent with the *Draft GP 2020* would generate solid waste streams that would exceed the disposal capacity of the Sonoma County Central Landfill. After this date, the transport of solid waste to landfills outside of Sonoma County with sufficient permitted capacity would commence. Due to the lack of certainty regarding the county's future landfill capacity, this would be a significant impact.

4.9-7 Increased Demand for Parks and Recreation Services and Facilities

Implementation of the *Draft GP 2020* would require new or expanded Community and Neighborhood Parks, Regional Recreation Areas, and Regional Open Space Parks in order to achieve recognized park planning standards. The construction of these facilities could result in adverse physical effects on the environment.

4.9-9 Increased Demand for Fire Protection and Emergency Service Facilities

Implementation of the *Draft GP 2020* would increase the demand for fire protection and emergency services and require the construction of new or expanded fire protection and emergency services facilities.

4.9-10 Wildland Fire Hazards

Implementation of the *Draft GP 2020* would expose people or structures to risk of loss, injury, or death involving wildland fires.

4.9-11 Demand for Additional Criminal Justice Facilities

Implementation of the *Draft GP 2020* would increase the demand for new or expanded Sheriff's Department substations and detention facilities the construction of which could cause significant environmental impacts.

4.9-12 Increased Demand for Library Facilities

Implementation of the *Draft GP 2020* would result in the demand for new or expanded County Library facilities in order to maintain acceptable service levels.

4.9-13 Increased Demand for Human Services Facilities

Implementation of the *Draft GP 2020* could exceed the ability of the County's Human Services Department to maintain an acceptable level of service within its present level of funding and facilities and therefore could result in the expansion or construction of new Human Services facilities.

4.10-2 Archeological and Paleontological Resources and Human Remains

Land Uses and development consistent with the *Draft GP 2020* could result in the disturbance of subsurface archeological and paleontological resources as well as human remains, including those interred outside of formal cemeteries.

4.11-3 Light Pollution and Nighttime Sky

Land uses and development consistent with the *Draft GP 2020* would generate additional sources of lighting which could result in sky glow, light trespass, and glare.

4.12-3 Increased Energy Demand and Need for Additional Energy Resources

Future land uses and transportation systems could substantially increase the demand for energy resources and the need for additional energy resources to meet this demand.

6.4 SIGNIFICANT IRREVERSIBLE ENVIRONMENTAL CHANGES

CEQA requires that significant irreversible environmental changes caused by a plan must be addressed in an EIR. Specifically, the EIR must consider whether “uses of non-renewable resources during the initial and continued phases of the project may be irreversible since a large commitment of such resources makes removal or non-use thereafter unlikely.”⁸ *Nonrenewable resources*, in this discussion, refer to the physical features of the natural environment, such as land, air, and waterways.

The land use designations proposed by the *Draft GP 2020* would result in commitment of these areas to the designated uses for the foreseeable future. Additionally, amendments in the *Draft GP 2020* would allow the development of differing uses that may not have been previously anticipated by the existing *General Plan*. However, as discussed in **Section 4.1 Land Use, Population, and Housing**, the proposed Land Use Amendments would not result in significant changes to land use designations from the existing *General Plan*.

Additionally, irreversible changes would likely occur due to future excavation, grading, and construction activities associated with uses permitted by the *Draft GP 2020*. Although these changes can generally be addressed by mitigation measures, the potential for disturbance would represent an irreversible change. The *Draft GP 2020* would also result in irreversible changes by increasing densities and introducing development onto the remaining sites that are designated for use, but that are presently undeveloped.

Land uses and development consistent with the *Draft GP 2020* would result in changes to traffic and circulation, and would thus increase air pollution and noise emissions. Other irreversible changes associated with the *Draft GP 2020* would be the future use of non-renewable resources during construction, including concrete, glass, plastic, and petroleum products. Operation of future uses would also consume energy as well as water.

Land uses and development consistent with the *Draft GP 2020* as well as policies to protect biological resources would result in the conversion of agricultural lands. Although the conversion of agricultural lands as the result of implementation of the *Draft GP 2020* would be a small percentage of the

⁸ CEQA Guidelines, Section 15126.2(c).

County's inventory of land available for agriculture, any conversion of agricultural lands would be a significant irreversible environmental change.