5.1 CUMULATIVE IMPACTS

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CEQA requires that an EIR discuss cumulative impacts of a project when the project's incremental effect is cumulatively considerable (CEQA Guidelines section 15130). Cumulatively considerable means that the incremental effects of an individual project are considerable when viewed in connection with the effects of past, current and probable future projects (CEQA Guidelines section 15065(c)). As defined in CEQA Guidelines section 15355, a cumulative impact is an impact that is created as a result of the combination of the project evaluated together with other projects causing related impacts.

PROJECTS CONSIDERED IN CUMULATIVE IMPACT ANALYSIS

The following elements are necessary to an adequate discussion of significant cumulative impacts (CEQA Guidelines section 15130(b)(1):

(A) A list of past, present, and probable future projects producing related or cumulative impacts, including, if necessary, those projects outside the control of the agency, or
(B) A summary of projections contained in a adopted general plan or related planning document, or in a prior environmental document which has been adopted or certified, which described or evaluated regional or area wide conditions contributing to the cumulative impact….

For the purpose of the Lower Lagoon Valley Specific Plan EIR analysis, the cumulative impacts analysis assumes buildout of the adopted City of Vacaville General Plan and the currently proposed Southtown and Rice/McMurtry projects.

The context of the cumulative analysis varies by technical area. For example, air quality impacts are evaluated against conditions in the Sacramento air basin. Similarly, the hydrology and water quality cumulative analysis considers the Ulatis Creek Watershed that receives runoff from the Specific Plan area. The cumulative context for public services would be the local service provider. Other cumulative analyses, such as biology, consider the potential loss of resources in a broader, more regional context.

CUMULATIVE IMPACT ASSESSMENT

Land Use and Planning

The Land Use Section generally does not address cumulative impacts separately, because for land use, there is no cumulative context to assess land use consistency and compatibility issues; land use effects are localized and would not combine with similar effects in other locations. Cumulative impacts with respect to TAFB Land Use Compatibility Plan would not differ from those identified for the project. Please see Impact 4.2-3 in Section 4.2, Land Use and Planning. The loss of Important Farmland, as designated by the CDC, is a growing problem in California. Development as well as the economic climate has resulted in the shrinking agricultural landscape. The CDC tracks the loss of Important Farmland by County.

There are four classifications of farmland that fall under the Important Farmland designation; Prime farmland: Farmland of Statewide Importance, Unique Farmland, and Farmland of Local Importance. Solano County had a net loss of 2,837 acres of Important Farmland according to the CDC's 1998-2000 Land Use Conversion Table. Total inventoried Important Farmland in the County totals 172,576 acres as of 2000.

5.1-1 Cumulative development, including the Proposed Project, would result in the conversion of Important Farmland (Prime and Unique) to developed uses.

Buildout of the General Plan would result in the conversion of Important Farmland (Prime and Unique Farmland). Once buildings or paved areas are constructed, the underlying class I or II soils are no longer available for agricultural activities. The only approach available to mitigate this impact to a less-than-significant level would be to replace the lost agricultural land. Theoretically, this could be accomplished by removing existing development from prime farmland. But feasibility and expanse could preclude this approach. The City's General Plan included the adoption of the ASA which is intended to mitigate impacts on Prime Farmland within the City's 100 square mile planning area by providing a definite geographic limit to urbanization. Nevertheless, the conversion of Prime and Unique Farmland would be considered a ***significant cumulative impact***. The conversion of these two types of Important Farmland to developed uses could also result in cumulative impacts related to the loss of biological resources and other environmental effects as well as loss of agricultural land. Cumulative impacts related to these issue areas and others are discussed in their respective sections in this EIR.

Approximately 244 acres of Important Farmland are located within the boundaries of the Specific Plan of which approximately 170 acres could be replaced elsewhere. With a total of 172,576 acres of Inventoried Important Farmland in Solano County, as of 2000, the loss of 244 acres as a result of this project would represents a loss less than one percent of the Important Farmland in the County. While this does not represent a significant loss when compared to the whole inventory, because development of the Proposed Project would result in a permanent conversion of Prime and Unique Farmland, the projects contribution to this cumulative impact would be ***considerable***.

Mitigation Measure

Mitigation measures are not available for the loss of Prime and Unique Farmland; therefore, the project's contribution to this cumulative impact remains *considerable.*

5.1-1 *None available.*

<u>Parks and Recreation</u>

5.1-2 Cumulative development, including the Proposed Project, would contribute to the increased demand for parks and recreational facilities.

As Vacaville continues to grow there will be a greater need to create parkland and open space areas within the City to meet increased demand. The City's General Plan requires the dedication if 4.5 acres per 1,000 residents. The City's General Plan Policy falls within the parameters set forth by the State's Quimby Act. New development would be required to either provide the required park facilities as part of the project and/or pay into the City's Park and Recreational Development Fees program. Specific designs, including number and placement,

for future parks are unknown at this time. However, because future development would be required to comply with General Plan goals and policies and would either dedicate park sites and/or pay into the fee program, this cumulative impact is considered ***less than significant***.

Mitigation Measure

5.1-2 *None required.*

Visual Resources

Those effects that are not increased by additional development in the project vicinity are not considered cumulative impacts. For example, spillover lighting on adjacent property is of concern only where parcels border one another. Lighting for new development discontinuous from the Proposed Project would have no effect on spillover lighting within or adjacent to the project site. Similarly, glare is not considered a cumulative effect. Views of the project site from I-80 are also not considered a cumulative effect.

No cumulative impact would occur associated with the view corridor from I-80 to the regional park since no development is to take place on the rolling hills and ridgelines surrounding the Proposed Project to the north, east, and south (note that I-80 lies to the west of the project site).

5.1-3 The Proposed Project would contribute to a cumulative alteration of aesthetic characteristics of the Lower Lagoon Valley region of Vacaville by increasing urban development in existing rural and undeveloped natural areas.

The Proposed Project would convert a primarily rural, undeveloped landscape to a developed environment permanently altering the visual character of the area, both during daylight and nighttime. Development within the City of Vacaville and within the surrounding area of the Proposed Project is anticipated to continue. The Lower Lagoon Valley area is currently designated for urban development in the City's General Plan. However, the Proposed Project, in combination with other proposed development within the City of Vacaville and the area in the immediate project vicinity, would result in a substantial change in the existing visual character of the area. Therefore, the project would result in a ***significant cumulative impact***.

A total of approximately 826 acres of the Specific Plan area is slated for development. The area is proposed to be developed with a variety of uses including residences, schools, a business village, and a golf course. Due to the size of the area, relative to other development proposed within the City of Vacaville and in the surrounding vicinity, the change in the visual character is anticipated to be cumulatively considerable. There are no mitigation measures available to reduce the project's overall contribution to the cumulative loss of visual character. Therefore, the project's contribution would be *cumulatively* ***considerable***.

Mitigation Measure

There are no feasible mitigation measures available to mitigate the alteration of aesthetic characteristics; therefore, the project's contribution remains *considerable*.

5.1-3 *None available.*

5.1-4 Cumulative development, including the Proposed Project, could contribute to an increase in nightlighting and overall light in this area of the City.

As mentioned previously, the Proposed Project would convert an area that is presently very rural and undeveloped to a developed environment. The project would introduce street lights, building lights, and vehicle lights into an area that presently does not contain many roads or buildings. The contribution of additional lighting within the plan area would substantially increase light and alter nighttime views of the Specific Plan area. This would be considered a ***significant cumulative impact***.

Due to the size of the proposed development and the amount of light anticipated to be produced by project uses, the Specific Plan could contribute a significant amount of light into the night sky and the project's contribution to this cumulative impact would be ***considerable***.

Mitigation Measure

Implementation of Mitigation Measures 4.4-3(a) through 4.4-3(c) would help offset new light sources; however, due to the increase in lighting over current site conditions, the project's contribution to this significant impact would remain *considerable*.

5.1-4 *Implement Mitigation Measures 4.4-3(a) through 4.4-3(c).*

Transportation and Circulation

Traffic generated by the Proposed Project would contribute to already unacceptable LOS E or F conditions that would occur in 2025 with future growth. If that contribution would result in a change to the volume-to-capacity ratio of 0.02 or greater, the project would result in a considerable contribution to significant cumulative impacts and would be considered to have significant environmental impacts. The impacts are shown in Tables 4.5-10 through 4.5-13, and are presented above in Impacts 4.5-2 through 4.5-5 of Section 4.5, transportation and Circulation. The impacts are related to locations that are identified as operating at LOS E or F under 2025 baseline conditions, and are summarized in Table 5.1-1.

5.1-5 Cumulative traffic, including the Proposed Project, would result in further reductions in volume-to-capacity ratios at the Alamo Drive and Merchant Street intersection in the AM peak hour and at the North Texas Street/Manuel Campos Parkway intersection in 2025 in the AM and PM peak hours.

As shown in Section 4.5, Table 4.5-10, the intersection of Alamo Drive and Merchant Street would operate at an unacceptable LOS E, and the intersection of North Texas Street and Manuel Campos Parkway would operate at LOS F under 2025 baseline conditions with reasonably foreseeable future growth. Both are considered ***significant cumulative impacts***. Traffic generated by the project, in combination with future growth, would result in a V/C ratio of 0.96 at the intersection of Alamo Drive and Merchant Street in the AM peak hour, an increase of 0.03 compared with a V/C of 0.93 with growth under the future 2025 baseline conditions. At the intersection of North Texas Street and Manuel Campos Parkway, traffic generated by the project would result in a V/C ratio of 1.21, an increase of 0.02 compared to the 2025 future baseline V/C of 1.19 in the AM peak hour, and a V/C ratio of 1.40, an increase of 0.03 compared to the 2025 future baseline V/C of 1.37 in the PM peak hour. These would be considered a ***considerable contribution*** to significant cumulative impacts. The intersection of North Texas Street and the I-80 eastbound ramps would operate at LOS F in the future with and without the Proposed Project; however, the project would not result in an increase in the V/C

TABLE 5.1-1

SUMMARY OF CUMULATIVE TRAFFIC IMPACTS

Location	Peak Hour	Future Baseline	Future Baseline with Project
		LOS (V/C ratio)	
Intersections			
Alamo Drive/Merchant St	AM	**E (0.93)**	**E (0.96)**
North Texas St/ Manuel Campos Parkway	AM	**F (1.19)**	**F (1.21)**
	PM	**F (1.37)**	**F (1.40)**
Freeway Segments			
Alamo Drive Overcrossing -Cherry Glen/Pena Adobe Overcrossing EB	PM	**F (1.11)**	**F (1.19)**
Freeway Ramps			
Alamo/Merchant Eastbound Off Ramp	AM	**F (1.11)**	**F (1.26)**
	PM	**F (2.26)**	**F (2.40)**
Alamo/Merchant Westbound On Ramp	AM	**F (1.52)**	**F (1.57)**
	PM	**F (1.12)**	**F (1.26)**
Freeway Merge/Diverge			
Alamo/Merchant Eastbound Off (Diverge)	PM	**F 53**	**F 57**

Note: LOS E or F shown in bold.
Source: Korve Engineering, January 2004.

ratio and therefore would not have a considerable contribution to this future significant cumulative impact.

Mitigation Measures

Implementation of the following mitigation measures would reduce project impacts to less-than-significant levels. However, because implementation of these measures is not within the jurisdiction of the City of Vacaville, this impact would remain *considerable.*

5.1-5 (a) *Construct the new intersection at North Texas Street and Manuel Campos Parkway with an additional northbound right-turn lane, two westbound left-turn lanes and a shared left-through lane, and one eastbound shared through-right-turn lane and one exclusive right-turn lane. Signalize the intersection.*

This intersection is planned in the City of Fairfield, and has not yet been constructed. As planned, it would not have sufficient capacity for the volume of traffic forecast in 2025. Level of service would improve from LOS F to LOS D (V/C 0.81) in the AM peak hour and LOS D (V/C 0.85) in the PM peak hour with this mitigation measure to redesign the intersection. The project would contribute about one percent of total traffic to this intersection in the future.

This impact would be significant and unavoidable because the planned new intersection of North Texas Street and Manuel Campos Parkway will be located in Fairfield; implementation of the mitigation measure is outside the jurisdiction of Vacaville, the Lead Agency for the proposed Lower Lagoon Valley Specific Plan.

(b) *Construct the California Drive overcrossing over I-80, connecting Marshall Road with Cherry Glen Road, as called for in the Vacaville General Plan.*

Implementation of this measure would improve the LOS at the intersection of Alamo Drive and Merchant Street from LOS E, with a V/C ratio of 0.93 to LOS D with a V/C ratio of 0.84 in 2025 with traffic *generated* by the Proposed Project. Construction of the California Drive overcrossing would have other significant impacts, as discussed below under "Variant with California Drive Overcrossing."

Without the California Drive overcrossing, mitigation of the significant impact at the Alamo Drive and Merchant Street intersection would require construction of triple left turn lanes that would involve acquisition of private property and demolition of existing structures that contain operating businesses. Therefore, mitigation at the intersection would be infeasible, and the cumulative impact would be significant and unavoidable.

5.1-6 Cumulative traffic, including the Proposed Project, would result in further reductions in V/C ratios on the eastbound I-80 freeway segment between the Alamo Drive overcrossing and the Cherry Glen/Peña Adobe overcrossing in the PM peak hour in 2025.

As shown in Section 4.5, Table 4.5-11 and as summarized in Table 5.1-1, the eastbound freeway segment between the Alamo Drive overcrossing and the Cherry Glen/Peña Adobe overcrossing would operate at LOS F in the future without the Proposed Project; the V/C would worsen with traffic from the Proposed Project, from 1.11 to 1.19, a change of 0.08. Thus, the project would contribute to a ***significant cumulative impact*** and the contribution would be considered ***cumulatively considerable****.* Table 4.5-11 in Section 4.5 also shows that the eastbound segments between Cherry Glen/Peña Adobe and Lagoon Valley and between Lagoon Valley and North Texas would operate at LOS F in the future, both with and without the Proposed Project; however in both cases the V/C ratio with the Proposed Project would be approximately the same as that of the 2025 future baseline or would be slightly improved based on traffic reassignments occurring in the City's Model. Therefore, the project would not have a cumulatively considerable contribution to future significant impacts at these freeway segments, and no mitigation is needed.

Mitigation Measures

Implementation of the following mitigation measures would reduce project impacts to less-than-significant levels. However, because implementation of these measures is not within the jurisdiction of the City of Vacaville, this impact would remain *considerable.*

5.1-6 *Widen eastbound I-80 between the Alamo Drive overcrossing and the Cherry Glen / Peña Adobe Road overcrossing by 12 feet, by adding an auxiliary lane in the existing shoulder area and relocating the shoulder into the adjacent right-of-way. Construct a retaining wall as part of relocating the shoulder.*

This measure would create a fifth traffic lane along I-80 eastbound, and improve the level of service on this freeway segment from LOS F to LOS D (V/C of 0.81) in the PM peak hour. A retaining wall is included in the measure to address cuts into the hillside adjacent to the freeway to create the new shoulder. The project would contribute about seven percent to total traffic volumes on this freeway segment.

Implementation of this mitigation measure would be under the jurisdiction of the California Department of Transportation. Because the City of Vacaville does not have jurisdiction to

implement this mitigation measure, or require that the project sponsor implement the measure, the cumulative impact would remain significant and unavoidable.

5.1-7 Cumulative traffic, including the Proposed Project, would result in further reductions in V/C ratios on the Alamo Drive / Merchant Street ramps to I-80 in the AM and PM peak hours.

The eastbound off-ramp and westbound on-ramp at Alamo Drive and Merchant Street would operate at LOS F in the morning and afternoon in 2025 without the Proposed Project; this would be a ***significant cumulative impact***. With traffic generated by the Proposed Project, V/C ratios would increase substantially; this would be considered a ***cumulatively considerable*** contribution. As summarized in Table 5.1-1, volume-to-capacity ratios would increase from 1.11 to 1.26 with project-generated traffic on the eastbound off-ramp in the AM and from 2.26 to 2.40 in the PM. V/C ratios would increase from 1.52 to 1.57 with project-generated traffic on the westbound on-ramp in the AM and from 1.12 to 1.26 in the PM. The project would contribute about 3 to 12 percent of the total traffic to these ramps.

Mitigation Measures

Implementation of the following mitigation measures would reduce project impacts to less-than-significant levels. However, because implementation of these measures is not within the jurisdiction of the City of Vacaville, this impact would remain *considerable.*

5.1-7 (a) *Implement Mitigation Measure 5.1-6 to add an eastbound lane to I-80 between the Cherry Glen / Peña Adobe overcrossing and the Alamo Drive overcrossing, and, in addition, widen the Alamo Drive / Merchant Street eastbound off-ramp by 12 feet to two lanes and add a new lane at the ramp intersection with Alamo Drive and Merchant Street to accommodate the new ramp lane.*

Implementation of all features of this mitigation measure would widen the freeway and the off-ramp in the eastbound direction and would result in improved V/C ratios in the morning and afternoon peak hours on the eastbound ramps, and would result in an acceptable LOS A in the morning peak hour and LOS F with an improved V/C of 1.13 in the PM peak hour. Implementing only Mitigation Measure 5.1-6 would improve V/C in the AM peak hour from 1.26 to 1.05 and in the PM peak hour from 2.4 to 2.9 but LOS would remain F in both peak hours.

As explained above, Mitigation Measure 5.1-6 to widen the freeway is under the jurisdiction of Caltrans and could not be implemented by the City. The freeway ramp is also under Caltrans jurisdiction and could not be widened by the City alone. Adding a separate lane at the intersection at the end of the ramp could be carried out at the direction of the City but alone would not reduce the cumulative significant impacts to less-than-significant levels. Thus, this significant cumulative impact at the eastbound freeway ramp would remain significant and unavoidable.

(b) *Implement Mitigation Measure 4.5-3(b) to widen the I-80 freeway to add a westbound lane between Alamo Drive and North Cherry Glen Road, and construct a retaining wall adjacent to the freeway. In addition, widen the westbound on-ramp at Alamo Drive/Merchant Street to two traffic lanes.*

Implementation of all features of this mitigation measure would result in acceptable LOS of C in the AM peak hour and A in the PM peak hour. With implementation of only Measure 4.5-3(b),

the on-ramp would continue to operate at LOS F, with a slightly improved V/C ratio from 1.57 to 1.31 in the AM peak hour and from 1.26 to 1.05 in the PM peak hour. As explained above for measure 4.5-3(b), this measure is outside the jurisdiction of the City of Vacaville; therefore the cumulative impact remains significant and unavoidable.

5.1-8 Cumulative traffic, including the Proposed Project, would further reduce the V/C ratio at the diverge from I-80 to the Alamo Drive / Merchant Street off-ramp.

Future development would result in LOS F, with a passenger car/mile/lane density of 53, a ***significant cumulative impact***. Traffic from the Proposed Project would increase the density to 57, resulting in a ***considerable contribution*** to cumulative significant impact. The diverge and merge locations at the I-80 interchange with the proposed Manuel Campos Parkway at the eastbound off-ramp and at the eastbound on-ramp in the PM peak hour would operate at LOS E both with and without the project; the project would not have a considerable contribution to this significant cumulative impact because the project would not result in an increase in the pc/mi/l density at these diverge and merge points.

Mitigation Measures

Implementation of the following mitigation measures would reduce project impacts to less-than-significant levels. However, because implementation of these measures is not within the jurisdiction of the City of Vacaville, this impact would remain *considerable.*

5.1-8 *Implement Mitigation Measure 5.1-6 to add an eastbound lane on I-80 between Alamo Drive and Cherry Glen/Peña Adobe Road.*

This mitigation measure would create a fifth eastbound traffic lane, eliminating merge/diverge conflicts. The freeway is outside the jurisdiction of the City of Vacaville; therefore this cumulative impact would remain significant and unavoidable.

Air Quality

5.1-9 Cumulative development, including the Proposed Project, could generate increased air pollutant emissions that could impair implementation of the Clean Air Plan.

The cumulative context for this project is defined as build-out of the Proposed Project as it compares to the emissions anticipated for the site if developed under the existing land use designations.

As discussed in Section 4.6 under Impact 4.6-4, the adopted land use plan for Lower Lagoon Valley would result in a much larger development than what is currently proposed for the site. The change in land use from the current agricultural farmland/residential to the proposed residential/commercial would create a substantial change in emissions associated with the site and result in a ***significant*** air quality impact. However, even though the Proposed Project would result in an increase in the daily emissions associated with the area over existing conditions, it would result in far fewer emissions than what has already been accommodated for under Clean Air Plan growth projections. As previously discussed, the Clean Air Plan is based on land use designations. Therefore, because the Proposed Project would result in fewer daily emissions for the entire project site than what is assumed in the General Plan, the cumulative development of the Proposed Project site and surrounding projects sites, the adoption of the

Specific Plan and associated General Plan amendments would reduce the City's cumulative contribution to air pollution and would not impair implementation of the Clean Air Plan. As such, the contribution of the Proposed Project would ***not be cumulatively considerable***.

Mitigation Measure

5.1-9 *None required*.

5.1-10 Cumulative development, including the Proposed Project, would include new sources of toxic air contaminants.

Cumulative development in the Vacaville Planning Area is expected to mainly consist of residential, commercial, office, residential, recreational, and light industrial uses, which generally do not result in toxic emission levels that can be considered substantial. The regulation and laws relating to TACs will also protect sensitive receptors throughout the Planning Area from substantial concentrations. Any source of emissions that could generate substantial concentrations of TACs would be subject to the permitting procedures of the YSAQMD to ensure that sensitive receptors are not exposed to levels above adopted standards. Therefore, this impact would be ***less than significant***.

Mitigation Measure

5.1-10 *None required*.

Noise

5.1-11 Cumulative development, including the Proposed Project, would increase vehicle trips and would result in increased noise levels.

Cumulative noise impacts would occur primarily as a result of increased traffic on local roadways due to the specific plan and other projects within the study area. Therefore, cumulative traffic-generated noise impacts have been assessed based on the contribution of the specific plan to the future cumulative base traffic volumes in the project vicinity. The noise levels associated with existing traffic volumes, cumulative base traffic volumes without the project, and cumulative base traffic volumes with the project are identified in Table 5.1-2 along with the contribution of traffic noise generated by the specific plan.

As shown in Table 5.1-2, cumulative development along with the specific plan would result in noise level increases of 0.6 to 4.2 dBA L_{dn} along the studied roadways. Because noise levels along some roadways would increase by more than $3L_{dn,}$ this is considered a ***significant cumulative impact***. The 4.2 dBA L_{dn} increase along Cherry Glen Road between Lyon Road and Pleasant Valley Road, and the 3.9 dBA L_{dn} increase along Pleasant Valley Road north of Cherry Glen Road would be considered substantial and significant. The increase in noise levels along the other study-area roadways would be less than 3.0 dBA L_{dn} and, therefore, would not be significant. The future noise levels along two roadway segments would be reduced as a result of changes in local circulation attributable to the Specific Plan.

The project contribution to the cumulative traffic noise impacts are also shown in Table 5.1-2. As shown, the Proposed Project development would contribute from 0.1 dBA to 0.4 dBA L_{dn} to future ambient noise levels. Future noise levels along four roadway segments would be lower than existing noise levels with implementation of the Specific Plan and cumulative development

TABLE 5.1-2

CUMULATIVE PROJECT ROADWAY TRAFFIC NOISE IMPACTS

Roadway Segment	Noise Levels in dBA L_{dn}					
	Existing Traffic Volumes	Cumulative Base Traffic	Cumulative + Project Traffic	Cumulative Increase[1]	Project Contribution[2]	Significance Threshold
Interstate 80, east of Alamo	75.9	76.7	76.5	0.6	-0.2	3.0
Interstate 80, Pena Adobe Rd. to Alamo	76.4	77.9	77.8	1.4	-0.1	3.0
Interstate 80, Lagoon Valley Rd. to Pena Adobe Rd.	65.6	66.7	66.5	0.9	-0.2	3.0
Interstate 80, N. Texas to Lagoon Valley Rd.	76.4	77.4	77.5	1.1	0.1	3.0
Interstate 80, Cherry Glen Rd. to Alamo/Merchant Rd.	75.5	77.2	77.0	1.5	-0.2	3.0
Cherry Glen Rd., Lyon Rd. to WB I-80 Ramps	55.0	51.3	51.7	-3.3	0.4	3.0
Cherry Glen Rd., Lyon Rd. to Pleasant Valley Rd.	55.3	62.4	59.5	4.2	-2.9	3.0
Cherry Glen Rd., Pleasant Valley Rd. to EB I-80 Ramps	46.9	54.2	46.4	-0.5	-7.8	3.0
Pleasant Valley Rd., North of Cherry Glen Rd.	53.0	60.6	56.9	3.9	-3.7	3.0
Alamo Dr., Merchant St. to EB I-80 Ramps	64.7	67.4	67.1	2.4	-0.3	3.0

1. Difference between Existing Traffic Volumes and Cumulative + Project Traffic Volumes.
2. Difference between Cumulative Base Traffic and Cumulative + Project Traffic Volumes.

Source: EIP Associates 2004. Calculation data and results are provided in Appendix C.

due to roadway reconfiguration and a redistribution of vehicle trips. Future noise levels along eight roadway segments would also be reduced by traffic redistribution provided by the specific plan. Based on this analysis, the 0.1 dBA to 0.4 dBA contribution of the Proposed Project development to future roadway noise levels would not exceed the identified thresholds of significance and, therefore, would ***not be cumulatively considerable***.

Mitigation Measures

5.1-11 *None required.*

Public Utilities

The project area is located at the upstream end of the wastewater collection system. Cumulative impacts would occur only in existing wastewater facilities downstream of the project area. Therefore, there is no discussion of impacts specific to new facilities in the vicinity of the project site.

5.1-12 Cumulative development, including the Proposed Project, would contribute to increased flows throughout many areas of the wastewater collection system that could result in required improvements to existing wastewater collection system facilities.

The Proposed Project would contribute to increased flows in a number of existing sewers that are expected to receive flows from other projects. The City collects development impact fees for the purpose of funding trunk sewer improvements with citywide benefit, including those affected by anticipated cumulative impacts. Specific improvements are identified and scheduled by the City through periodic master planning and design activities.

Funding mechanisms for collection system improvements with citywide benefit have been established. Therefore, the production of additional wastewater flow and the need for improvements to the existing downstream collection system is considered a ***less-than-significant impact***.

Mitigation Measure

5.1-12 *None required.*

5.1-13 Cumulative Development, including the Proposed Project, would increase flow to the Easterly Wastewater Treatment Plant.

Completion of the Easterly Wastewater Treatment Plant expansion is anticipated prior to occupancy of the Proposed Project. The expansion is sized to accommodate cumulative growth throughout the City of Vacaville, including the project area, through 2012 or later.[1] The City collects development impact fees for the purpose of funding treatment plant improvements needed to accommodate cumulative growth. Specific improvements are identified and scheduled by the City through periodic master planning and design activities. This is considered a ***less-than-significant impact***.

Mitigation Measure

5.1-13 *None required.*

5.1-14 Cumulative Development, including the Proposed Project, would result in an increased demand for electrical and natural gas supplies and distribution infrastructure.

The ability of PG&E to provide its services concurrently with each project is evaluated during the development review process. The input facilitates a detailed review of all projects by service purveyors to assess the potential demands for utility services on a project-by-project basis. Developers are required to obtain approval from PG&E for the construction of the needed infrastructure. Consistent with PG& E requirements, the City and project applicants are required to work with PG&E to locate utility line corridors to distribute electricity and natural gas to proposed development from distribution mains. Consistent with General Plan Policy 5.1-I 11, utility distribution lines would be constructed underground adjacent to new residential and/or commercial development projects as a condition of approval.

Because the provision of adequate electricity and natural gas would be required prior to project approval, and because distribution infrastructure would be constructed consistent with PG&E requirements and City General Plan policies, cumulative impacts attributed to electricity and natural gas demand would be considered ***less than significant***.

Mitigation Measure

5.1-14 *None required*.

5.1-15 Cumulative development, including the Proposed Project, would increase the demand for cable television service and could result in the need for additional distribution infrastructure.

Development in the City of Vacaville in the Comcast Cable service area would result in the need for additional distribution infrastructure.

Service connections would be provided by Comcast Cable and would be funded through developer fees and future customer billings. The cable service distribution lines would be constructed underground within street and trail right-of-ways. Because the installation of cable service distribution infrastructure to meet cumulative demand would be achieved consistent with City requirements, cumulative impacts to cable service would be ***less than significant***.

Mitigation Measures

5.1-15 *None required*.

Public Services

5.1-16 Cumulative development, including the Proposed Project, would require the need for additional police personnel to maintain the standard level of police protection services.

Cumulative growth in the City of Vacaville, including the Proposed Project would increase the demand on police protection services. Development in the City is required to contribute funding to ensure that police protection service goals are met. In addition, the City Police Department has plans to construct a new facility that is scheduled to begin construction in 2004. Because there is a mechanism in place to fund equipment and staff to achieve established service goals, this cumulative impact is considered ***less than significant***.

Mitigation Measure

5.1-16 *None required.*

5.1-17 Cumulative development, including the Proposed Project, would require the need for additional fire services to maintain the current level of services.

Similar to police services, fire services are provided based on established service standards and goals. Cumulative development within the City would be subject to these standards. New development would place additional demand on the City's Fire Department to provide adequate fire services. Additional fire facilities are recommended to serve other development areas of the City.[2] Development in the City is required to contribute funding to ensure that fire protection service goals are met. Because there is a mechanism in place to fund equipment and staff to achieve established service goals, this cumulative impact is considered ***less than significant***.

Mitigation Measure

5.1-17 *None required*.

5.1-18 Cumulative development, including the Proposed Project, would increase the amount of solid waste disposed of at B&J Landfill and could decrease capacity at the landfill.

Currently, the B & J Landfill is anticipated to be able to accept waste until 2070. However, the final closure date would be affected by several factors, including regional growth rates, economic conditions, and the efficiency of waste recovery. Depending on these factors, waste from the Proposed Project, in combination with other cumulative development, could shorten the lifespan of the landfill. The City of Vacaville currently employs an aggressive source reduction program and reported a diversion rate of 56 percent in 2000.

Therefore, it is anticipated that adequate capacity is available at the landfill to meet demand of cumulative development. Therefore, the impact is considered ***less than significant.***

Mitigation Measure

5.1-18 *None required*.

Water Supply

The project is located at the perimeter of the existing water distribution system. Cumulative impacts would occur only in existing water distribution system facilities within the main zone or one of the upper pressure zones. Therefore, there is no discussion of impacts specific to new improvements in the vicinity of the project site.

5.1-19 Cumulative development, including the Proposed Project, would contribute to increased water demands throughout many areas of the existing water distribution system that could result in required improvements to existing water distribution system facilities.

The Proposed Project would contribute to an increase in the water demand citywide. The City collects development impact fees for the purpose of funding water distribution system improvements with citywide impact, including those affected by anticipated cumulative impacts. Specific improvements are identified and scheduled by the City through periodic master planning and design activities.

Funding mechanisms for water distribution system improvements with city-wide benefit have been established. The Proposed Project will participate in established City funding mechanisms and will incorporate maintenance district mechanisms to ensure funding of operation and maintenance of these systems. Therefore, the generation of additional water demand and the need for improvements to the existing water distribution system is considered a ***less-than-significant impact.***

Mitigation Measure

5.1-19 *None required*.

5.1-20 Cumulative development, including the Proposed Project, would increase the total water demand city-wide.

The City of Vacaville is projecting an average day water demand for the Year 2025 of approximately 31,331 ac-ft/yr (including the Proposed Project). The water supply assessment conducted recently by the City of Vacaville (SB610 Water Supply Assessment Report) concludes that there is sufficient water supply from the existing and planned sources to meet this increased water demand under a variety of delivery conditions and is considered a ***less-than-significant impact.***

Mitigation Measure

5.1-20 *None required*.

Hydrology, Drainage and Water Quality

The cumulative context for the analysis of cumulative hydrology, drainage, and water quality impacts is the Ulatis Creek Watershed, which includes the City of Vacaville and all cumulative growth therein, as represented by full implementation of the City of Vacaville General Plan.

The Proposed Project would increase the number of people and structures that could be exposed to potential effects related to seiche and earthen dam failure inundation. Such potentially adverse environmental effects would be site-specific and generally would not combine with similar effects that could occur with other projects in Vacaville. Implementation of the California Building Code standards pertaining to seismic safety and DOSD regulations would ensure that potential site-specific impacts would be less than significant. Therefore, no cumulative impact would occur.

The Specific Plan area has not been identified as a significant groundwater recharge area. Groundwater recharge potential would not be substantially affected because infiltration is limited under existing conditions. For a discussion of cumulative impacts related to groundwater use and supplies, please see Section 4.11, Public Utilities – Water Supply.

5.1-21 Cumulative development, including the Proposed Project, could increase runoff that could exceed the capacity of existing drainage facilities resulting in localized flooding.

Cumulative development in the City of Vacaville could include development of currently undeveloped land. Increasing the amount of impervious surface cover over existing conditions would result in an associated increase in runoff that could exceed the capacity of existing drainage facilities and contribute to localized flooding. This is considered a ***significant cumulative impact***.

As presented in Table 5.1-3, the Proposed Project, with implementation of the proposed detention basins and related drainage facilities identified in the preliminary drainage study, would decrease peak flows discharging from the Lower Lagoon Valley watershed. Although a preliminary drainage study has been completed, the project proponent is required to complete a Master Drainage Plan that identifies specific improvements consistent with City General Plan policies. Until a Master Drainage Plan is completed and approved by the City the project's contribution to this cumulative impact is ***considerable***.

TABLE 5.1-3

COMPARISON OF MODELED DISCHARGES FOR THE 100-YEAR STORM WITH ONSITE DETENTION BASINS

Location	Node Designation	Modeled Discharge[1]	
		Existing Condition	With Project Condition
Discharge into Lagoon Valley Lake[2, 3]	C (L34)	2566	1616
Discharge into Bypass Channel[2, 3]	C (L32+33)	1014	229
Combined Runoff from Area West of Bypass Channel[4]	C (L36+37)	788	587
Discharge at Downstream End of Bypass Channel[3]	C (BYPASS)	1775	811
Discharge at the I-80 Box Culvert[5]	C(ND3)	1277	1147

Notes: Subshed designations are those used in the HEC-1 model and are shown on Figure 4.11-3.
1 Discharge measured in cubic feet per second.
2 Runoff from the proposed Residential & Golf course development (located south of Lagoon Valley Lake) and the undeveloped areas surrounding the project site.
3 The Proposed Project plans to divert some of the area the currently drains to the Bypass Channel to the Lagoon Valley Lake because of the limited capacity of the Bypass Channel.
4 Runoff from the proposed Business Village Development, located west of Lagoon Valley Lake and areas west of I-80.
5 Runoff from the Lower Lagoon Valley watershed at the northern end of the valley (discharge from the Lagoon Drain).
Source: West Yost & Associates & BKF

Mitigation Measures

Preparation of a drainage master plan prior to Tentative Map approval would ensure that the Proposed Project includes sufficient detention storage to reduce the 10- and 100-year peak flows from the Lower Lagoon Valley watershed to 90 percent of existing peak flows, as required by General Plan Policy 2.3-I 14 for development in the watershed. This would reduce the risk of flooding and would ensure consistency with General Plan policies, thus reducing the project contribution to *less than considerable*.

5.1-21 *Implement Mitigation Measures 4.11-1(a) through 4.11-1(c).*

5.1-22 Increased runoff generated by cumulative development, including the Proposed Project, could result in sedimentation and increased levels of urban contaminants, which could affect receiving water quality in the Ulatis Creek Watershed.

Cumulative development in the City of Vacaville could include development of currently undeveloped land. Increasing the amount of impervious surface cover over existing conditions would result in an associated increase in runoff. Runoff could carry increased levels of sediment (as a result of construction activities) and urban contaminants (post-construction activities) that could affect receiving water quality in the Ulatis Creek Watershed. This is considered a ***significant cumulative impact***.

Any construction in the State of California on one acre or more requires preparation of a SWPPP to comply with the requirements of the SWRCB NPDES General Permit. The best management practices identified in the SWPPP would help mitigate for the impact of construction activities on storm water quality. Recent amendments to the General Permit also require water quality monitoring. Construction activities (e.g., excavation and trenching) in areas where shallow groundwater is present and groundwater extraction is necessary for construction would be subject to the RWQCB construction dewatering permit requirements, which would help minimize the potential for discharging sediment-laden groundwater into surface water drainages.

The City of Vacaville has begun developing a program to implement the Phase II NPDES requirements. At this time no specific ordinance has been passed to reflect the implementation of the Phase II stormwater regulations, but the City has informed developers that review of current development projects will be reviewed for compliance with stormwater regulations and BMPs. Post-construction measures would require the City to implement structural and non-structural BMPs that would mimic pre-development quantity and quality runoff conditions from new development and redevelopment areas.

The Proposed Project includes implementation of BMPs to manage water quality by providing on-site runoff treatment. However, because the City's SWMP has not yet been approved, and the specific BMPs that would be used to reduce pollutant loading, and their locations have not been identified, the project's contribution to this cumulative impact is ***considerable***.

Mitigation Measures

Implementation of Mitigation Measure 4.11-3(a) through (f) would ensure BMPs specific to construction activities and land uses in the Proposed Project are included in project design and are monitored for their effectiveness in reducing urban pollutants in runoff so that Basin Plan objectives and water quality standards are not violated, and to ensure consistency with NPDES Phase II requirements. This would reduce potential water quality effects from construction activities and urban runoff to a *less-than-considerable level*.

5.1-23 *Implement Mitigation Measures 4.11-3(a) through 4.11-3(f).*

Geology and Soils

Development of the Proposed Project would increase the number of structures that could be subject to the effects of expansive soils or other soil constraints that could affect structural integrity, roadways, or underground utilities. Implementation of the Proposed Project would increase the risk of damage to property and/or injury to people due to construction of structures adjacent to unstable slopes, such as the proposed berm or the mapped landslide and earthflow areas. Site preparation and development would also result in temporary and permanent topographic changes, such as the constructed berm, that could affect erosion rates or patterns. Potentially adverse environmental effects associated with expansive soils, landslides, slope stability, topographic alteration, and erosion, usually are site-specific and generally would not combine with similar effects that could occur with other projects in Vacaville. Consequently, impacts related to soils from the Proposed Project would not result in a cumulative impact.

5.1-22 Cumulative development, including the Proposed Project, would result in increased exposure of people or structures to potential risks caused by earthquake activity, including strong groundshaking and seismic-related ground failures such as liquefaction and earthquake-induced landslides.

Buildout of the City's General Plan, including the Proposed Project, would increase the number of people and structures that could be exposed to potential effects related to seismic hazards such as groundshaking, liquefaction, settlement, or lateral spreading. This is considered a ***significant cumulative impact***. The Proposed Project's contribution would be ***cumulatively considerable***. Implementation of the CBC and General Plan policies, would reduce the cumulative impacts and the Proposed Project's contribution to cumulative impacts; however, to

fully mitigate the project's contribution to seismic-related hazards, project-specific mitigation would be required.

Mitigation Measure

Implementation of the following mitigation measure would reduce this impact to a *less-than-considerable level*.

5.1-23 *Implement Mitigation Measure 4.12-1(a) and (b).*

Hazards and Human Health

5.1-24 Cumulative development, including the Proposed Project, could expose people to unidentified soil or groundwater.

For any projects in the City of Vacaville General Plan area that would involve development or redevelopment of an existing site in which soil or groundwater contamination may have occurred, the potential exists for release of hazardous materials during construction and/or remediation of those sites. For individuals not involved in construction activities, the greatest potential source of exposure to contaminants would be airborne emissions, primarily through construction-generated dust (see Section 4.6, Air Quality). Other potential pathways, such as direct contact with contaminated soils or groundwater would not pose as great a risk to the public because such exposure scenarios would typically be confined to the construction zones.

The project's contribution to exposure to unidentified contaminants in soil or ground water, in combination with other remediation projects in Vacaville, would result in a ***less-than-significant cumulative impact***. This conclusion is based on implementation of site-specific risk management controls and compliance with applicable laws and regulations pertaining to site cleanup and hazardous materials management at the other locations. Moreover, an individual who is directly outside the construction zone of one source would be unlikely to be exposed to maximum levels from another source. Such exposure would typically be site-specific and would involve accidental or inadvertent releases of soil or groundwater. Associated health and safety risks would generally be limited to those individuals working with soil or groundwater or to persons in the Specific Plan area and would not combine with similar effects elsewhere in the City's General Plan boundaries.

Nonetheless, implementation of applicable hazardous materials management laws and regulations adopted at the federal, State, and local level would ensure cumulative impacts related to development of known or potentially contaminated sites in the Proposed Project would be less than significant. These regulations include: Titles 29 of the CFR and 8 of the CCR, which address workplace safety. These regulations would be implemented through a variety of agencies including the regional OSHA office, DTSC, CalEPA, and the SCDEM.

Mitigation Measure

5.1-24 *None required.*

5.1-25 Cumulative development, including the Proposed Project, could result in cumulative impacts from increased risk related to the storage, uses, and disposal of hazardous materials.

The Proposed Project, in conjunction with cumulative development in the City of Vacaville, would include areas designated for commercial uses. Cumulative development would also include continued operation or development of new light-industrial uses or public/quasi-public facilities (e.g., sanitary sewer facilities). These types of development would increase the use of hazardous materials within the area, resulting in potential health and safety effects related to hazardous materials use. No other planning areas are directly adjacent to the Proposed Project.

Potential impacts associated with the Proposed Project would be largely confined to the golf course and the office and commercial areas. Such incidents would typically be site-specific and would involve accidental spills or inadvertent releases. Associated health and safety risks would generally be limited to those individuals using the materials or to persons in the immediate vicinity of the materials and would not combine with similar effects elsewhere in the City's General Plan boundaries. Therefore, the project's contribution would result in a ***less-than-significant cumulative impact***. (For a discussion of cumulative effects related to airborne toxic air contaminant emissions from commercial sources, please see Section 4.6, Air Quality).

Mitigation Measure

5.1-25 *None required.*

5.1-26 Cumulative development, including the Proposed Project, could result in a cumulative increase in hazardous materials transportation in the area, which could expose greater numbers of people to increased risks in the event of an inadvertent release or spill.

Development in the City of Vacaville, including the Proposed Project, would result in an increase in hazardous materials transportation in the area, which could expose greater numbers of people to increased risks in the event of an inadvertent release or spill. Stringent regulatory requirements apply to both common and special delivery carriers that would handle the deliveries and transport of hazardous materials to and from the project area. While these regulations do not eliminate the potential for truck accidents and resulting spills, it would reduce the frequency of occurrences and would limit the number of people that could be exposed. These regulations include: Titles 49 of the CFR and 26 of the CCR, which address the transportation of hazardous materials. These regulations would be implemented through a variety of agencies including the regional federal DOT office, California DOT, and the SCDEM. Implementation of applicable laws and regulations would ensure Proposed Project cumulative impacts associated with the transport of hazardous materials within the region would be ***less than significant***.

Mitigation Measure

5.1-26 *None required.*

5.1-27 Cumulative development, including the Proposed Project, would result in a cumulative increase in the number of people and structures which could be exposed to wildland fires.

Development in the City of Vacaville General Plan, including the Proposed Project, would result in an increase in the number of people and structures which could be exposed to wildland fires

along the City's borders where urban land interfaces with rural land. The City of Vacaville General Plan Policies 9.3-G1, -G2, -I1, -I2, -I3, and –I4 are used by the City to provide a safe environment for residents of the City, decrease the risk from fires (including wildland fires), and to provide a level of service sufficient for emergency response times. The City enforces the CBC and Uniform Fire Code (UFC) through the issuance of building permits and conditions of approval. Further, prior to the construction of any structures or communities, the City reviews project plans for conformance with the UBC and UFC to reduce risk of fires originating from within the City. As stated in Chapter 4.9, Public Services, the City Fire Department ensures that fire and emergency services are at levels that can provide sufficient services to reduce the risk of loss, injury, or death from wildland fires. Never the less, because buildout of the general plan would include increased development in areas susceptible to wild fire hazards, this is considered a ***significant cumulative impact***.

The Proposed Project would contribute to increased numbers of structures and people exposed to wild fire hazards. However, through implementation of the CBC, City General Plan police and Specific Plan policies, the project's contribution would ***not be considerable***.

Mitigation Measure

5.1-27 *None required.*

Cultural Resources

5.1-28 Cumulative development, including the Proposed Project, could result in the disturbance of previously identified or unidentified prehistoric sites or historic archaeological features, paleontological resources or previously unidentified human remains.

Development in the region (grading and excavation) could result in the damage or destruction of known prehistoric, historical and paleontological resources, as well as any existing undiscovered subsurface artifacts. The Vacaville area, including the Specific Plan area, contains both known prehistoric and historic cultural resources. The results of the records search and field investigation for the Proposed Project identified known prehistoric and historic resources that could be adversely affected, and therefore, could contribute to the loss of these resources. In combination with other development occurring within the City of Vacaville the potential loss of these resources could be considered a ***significant cumulative impact.***

Numerous laws, regulations, and statutes, on both the federal and state levels, seek to protect and target the management of cultural resources. These would apply to development under the City of Vacaville General Plan, including the Proposed Project. In addition, the City of Vacaville General Plan includes guiding and implementing policies to protect cultural resources from unnecessary impacts. These policies include inventory and evaluation processes and require consultation with qualified archaeologists in the event that previously undiscovered cultural materials are accidentally exposed.

As discussed previously in this section, grading and excavation activities could result in the damage or destruction of known prehistoric and historic, as well as paleontological resources. Due to the size of the Specific Plan area slated for development, and the limited number of prehistoric, historic, and paleontological resources the loss of these resources, relative to other development occurring within the city, would be considered ***cumulatively considerable***.

Mitigation Measures

Implementation of Mitigation Measures 4.14-1 through 4.14-3, and 4.14-6 would help to reduce the impact; however, the impact would remain *cumulatively considerable*.

5.1-28 *Implement Mitigation Measures 4.14-1, 4.14-2, 4.14-4, 4.14-6.*

Biological Resources

5.1-29 Cumulative development, including the Proposed Project, could adversely contribute to the cumulative loss of regional wildlife and habitat.

Lagoon Valley is one of a series of similar small valleys that occur in the eastern foothills of the Coast Ranges along the western side of the Central Valley, north of the Sacramento-San Joaquin Delta. A contiguous series of similar valleys extends along the foothills north of the Delta, to approximately Highway 20 in western Colusa and eastern Lake counties. These valleys provide a unique ecosystem along the eastern Coast Range foothill corridor for local and migratory wildlife as they represent interconnected islands of habitat diversity. In these islands of diversity, grasslands, oak and riparian woodlands, wetlands and open water habitats all occurring in close proximity provide a rich resource base for regional wildlife, not available in the Central Valley. It is the dispersion of these islands through the corridor that makes them valuable. They function as stepping stones of resources for wildlife traveling through the corridor. Similar habitats also occur along the foothills south of the Delta, but the relatively large expanse of low lying, flat Delta lands act as a significant barrier to many wildlife species that may travel along this corridor. Highways such as I-80, State Route 128 and State Route 20 bisect these foothills and create human access to these areas that focuses development in the population centers of Vacaville, Winters and the Capay Valley (e.g., Southtown and Reynolds Ranch). As development continues, the foothill corridor and its unique habitats become progressively fragmented, reducing their value to local wildlife species.

As development in the vicinity of the project site continues, more mobile species may be able to survive by moving to new areas, while less mobile species would be extirpated. However, with continued conversion of natural habitat to human use, the availability and accessibility of remaining natural habitats in this ecosystem would dwindle and those remaining natural areas would not be able to support additional plant or animal populations of above their current carrying capacities through increased competition for resources, displacement and development induced introduction of non-native species. Therefore, the loss of wildlife and wildlife habitat on a regional level would be a ***significant cumulative impact***.

Construction of the Proposed Project would contribute to fragmentation and loss of regional biodiversity through the incremental conversion of natural habitat to human use, and thus limit the availability and accessibility of remaining natural habitats to regional wildlife. Therefore, because the Proposed Project will involve the development of natural lands for human use in an area that is already subject to development from a number of other projects, the contribution to that loss from the Proposed Project would be ***considerable***.

Mitigation Measures

Although construction of the Proposed Project would result in a considerable contribution to the regional loss of wildlife habitat, this contribution would be reduced through mitigation. Partial mitigation for project related impacts has been accomplished through project designs to

preserve and/or enhance areas of natural habitat and retain movement corridors that will allow wildlife to pass through the site. However, even with these project design measures, some impacts would still remain and the projects contribution to the loss and fragmentation of this ecosystem would still be considerable. Therefore, implementation of the following mitigation measures would be required to reduce the magnitude of loss of wildlife, so this impact would *not be considerable*.

5.1-29 *Implement Mitigation Measures 4.15-1 through 4.15-10.*

The project design measures in combination with the above project level mitigation measures would reduce the projects contribution to the regional loss of wildlife habitat to less than considerable levels. The reduction in the levels of this impact would be accomplished through the preservation and enhancement of existing natural habitat on-site for resident wildlife, and by maintaining corridors through the site for wildlife to access and utilize resources at the site and allow for wildlife movement through the site to other areas in the region.

ENDNOTES

1. West Yost & Associates, *Project Report, Easterly Wastewater Treatment Plant Renovation & Expansion Facilities Plan,* July 7, 1998.

2. See *City of Vacaville, Standards of Response Cover Study (Volumes 1 and 2),* Draft Report, July 11, 2003.