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This Environmental Impact Report (EIR) provides an assessment of the potential environmental consequences of adoption and implementation of the proposed Napa County Housing Element Update and its associated zoning amendments. This assessment is intended to inform Napa County decision-makers, other responsible agencies and the public-at-large of the nature of the Housing Element Update and its effect on the environment. This EIR was prepared in accordance with and in fulfillment of California Environmental Quality Act (CEQA) requirements. Napa County is the lead agency for the project.

A. Proposed Action

The proposed project, Napa County Housing Element Update, is an update of the October 26, 2004 Housing Element. The proposed Housing Element would guide the County’s housing efforts through June 30, 2014. The proposed project is described in more detail in Chapter 3.

B. Program-Level Analysis and Tiering from the General Plan EIR

This document is a programmatic EIR, as described in Section 15168 of the CEQA Guidelines, which analyzes potential environmental impacts of the adoption of the proposed Housing Element. As a programmatic EIR, it is not project-specific, and does not evaluate the impacts of specific projects that may be proposed under the Housing Element Update. Such projects will require separate environmental review to secure the necessary development permits, except as noted below.

Project-specific information and mitigation measures are included in this Draft EIR where applicable and relevant to identified housing sites that were included in the rezoning program of the 2004 Housing Element. The housing sites at Angwin, Moskowitz Corner and Spanish Flat are included in this Draft EIR because they are being considered for affordable housing development in the proposed Housing Element Update. However, because these
sites were already rezoned to allow affordable housing under the adopted 2004 Housing Element, and because potential environmental impacts associated with the rezoning of these sites were analyzed by the Environmental Assessment (EA) completed for the 2004 Housing Element, an applicant may apply to develop affordable housing on any of these three sites by right at any time without further environmental evaluation. New housing units on the identified housing sites would require a building permit, which would be reviewed by the Napa County Conservation, Development and Planning Department for compliance with the Zoning Code. The applicant would also be required to comply with both the development standards of the Affordable Housing Combination District (AHCD) zoning and the mitigation measures from the 2004 EA before the Department would issue the permit.

This EIR “tiers” from the program-level EIR prepared for the 2008 Napa County General Plan Update, making use of the information and analysis in that document to the extent feasible. As stated in Section 15152 of the CEQA Guidelines, “tiering” refers to using the analysis contained in a broader EIR (such as one prepared for the Napa County General Plan) with later projects. Tiering incorporates by reference the general discussions from the broader EIR and concentrates the new analysis on the issues specific to the later project.

The Napa County General Plan EIR is available for review at:
Conservation, Development and Planning
1195 Third Street, Suite 210
Napa, California 94559
www.co.napa.ca.us/housingelement

C. **EIR Scope, Issues and Concerns**

The scope of this EIR was determined after consulting with potential responsible and trustee agencies, and other interested parties. Environmental im-

1-2
pacts considered in this EIR include direct, indirect and cumulative impacts in the following subject areas:

1. Agriculture
2. Land Use
3. Population, Housing and Employment
4. Transportation
5. Biological Resources
6. Fisheries
7. Noise
8. Air Quality (including Climate Change)
9. Human Health and Risk of Upset
10. Geology, Soils and Mineral Resources
11. Hydrology and Water Quality
12. Cultural and Paleontological Resources
13. Public Services and Utilities
14. Visual Resources, Light and Glare

D. Report Organization

This EIR is organized into the following chapters:

- Chapter 1: Introduction. Provides a preface and overview describing both the intended use of the document and the review and certification process of both the Draft Housing Element and the EIR.

- Chapter 2: Report Summary. Summarizes environmental consequences that would result from the proposed project, describes recommended mitigation measures and indicates the level of significance of environmental impacts before and after mitigation. A Summary Table is also included for clarity.

- Chapter 3: Project Description. Describes the Housing Element Update in detail, including a summary of the programs and policies in the Draft Housing Element and a description of housing sites that are proposed for the construction of affordable housing.
♦ Chapter 4: Environmental Evaluation. Provides an analysis of the potential environmental impacts of the Draft Housing Element and presents recommended mitigation measures, if required, to reduce their significance.

♦ Chapter 5: Alternatives to the Proposed Project. Considers two alternatives to the proposed project, including the CEQA-required “No Project Alternative” and a “Regional Housing Needs Allocation Transfer Alternative.”

♦ Chapter 6: CEQA-Required Assessment Conclusions. Discusses growth inducement, cumulative impacts, unavoidable significant effects and significant irreversible changes as a result of the project.

E. Environmental Review Process

The Draft EIR will be available for review by the public and interested parties, agencies and organizations for a period of at least 45 days, as required by State law. A public hearing on the Draft EIR will be held during the review period, during which oral comments are welcome. Written comments on the Draft EIR are also encouraged for incorporation into the Final EIR and should be submitted to:

Nancy Johnson  
c/o Conservation, Development and Planning  
1195 Third Street, Suite 210  
Napa, CA 94559

Following the close of the public comment period, a Final Environmental Impact EIR (FEIR) will be prepared, including responses to all substantive comments regarding the Draft EIR and any clarifications or changes needed to the text of the Draft EIR. The FEIR will be made available for public review prior to consideration of its certification by the Napa County Board of Supervisors. Once the Board of Supervisors certifies the FEIR, the Board may consider adoption of the Draft Housing Element or a project alternative which falls within the scope of the EIR’s analysis.
2 Report Summary

This summary presents an overview of the analysis contained in Chapter 4: Environmental Evaluation. CEQA requires that this chapter summarize the following: 1) unresolved issues and areas of controversy; 2) significant impacts; 3) unavoidable significant impacts; 4) implementation of mitigation measures; and 5) alternatives to the project.

A. Project under Review

This Draft EIR provides an assessment of the potential environmental consequences of adoption of the Napa County Draft Housing Element, conforming Napa County General Plan amendments affecting other elements of the General Plan and implementing ordinances. The Housing Element is intended to satisfy the State requirement that cities and counties fairly accommodate their share of California’s projected housing needs. Napa County is required to analyze local housing needs and resources in order to develop policies and implementation programs to meet the needs of all income segments of the community and of future residents. The proposed project would incorporate several components to meet these requirements, including programs that would create affordable housing units, implementation of policy changes intended to facilitate the construction of affordable housing and designation of sites as potential locations for the construction of new affordable housing units. The Draft Housing Element includes a wide range of policies and programs to encourage and support the production, preservation and rehabilitation of housing affordable to all economic segments of the community. The components of the Draft Housing Element are further detailed in Chapter 3 of this EIR.

B. Unresolved Issues and Areas of Controversy

The County received comments related to potential areas of controversy surrounding the Housing Element at a community meeting regarding EIR Scoping on July 7, 2008. Additional written comments were received in response to the Notice of Preparation that was issued by the County on July 3, 2008.
Commentors suggested that the EIR should consider potential impacts related to:

- Accessibility to jobs from housing sites, availability of jobs in the northern areas of the county and accommodation of workforce housing.
- Availability of adequate services on housing sites, including sewer, water and emergency response.
- Importance of smart growth policies when planning for future housing and transportation facilities.
- Impacts associated with traffic, growth and new infrastructure.
- Safety hazards, including health risks associated with previous agricultural and industrial uses on housing sites.
- Incompatibilities between adjacent land uses.
- Potential for archaeological resources that have not yet been identified in site inventories.
- Future development of the Napa Pipe sites and associated impacts on the City of Napa.

C. Alternatives to the Project

This Draft EIR analyzes alternatives to the proposed Housing Element. Two alternatives to the proposed project are considered and described in detail in Chapter 5:
- No Project Alternative
- Regional Housing Needs Allocation Transfer Alternative

As shown in the alternatives analysis in Chapter 5, the No Project Alternative has the least environmental impact and is therefore the environmentally superior alternative. The next most environmentally-preferable alternative would be the Regional Housing Needs Allocation Transfer Alternative.
D. Summary Table

Table 2-1 presents a summary of impacts and mitigation measures identified in this report. It is organized to correspond with the environmental issues discussed in Chapter 4.

The table is arranged in four columns: 1) environmental impacts; 2) significance prior to mitigation; 3) mitigation measures; and 4) significance after mitigation. For a complete description of potential impacts, please refer to the specific discussions in Chapter 4.
## SUMMARY OF IMPACTS AND MITIGATION MEASURES

<table>
<thead>
<tr>
<th>Significant Impact</th>
<th>Significance Before Mitigation</th>
<th>Significance With Mitigation</th>
<th>Mitigation Measures</th>
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<tbody>
<tr>
<td><strong>Agriculture</strong></td>
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<tr>
<td>There are no significant impacts related to agricultural resources as a result of the proposed Housing Element Update. Therefore, no mitigation measures are necessary.</td>
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<tr>
<td><strong>Land Use</strong></td>
<td></td>
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<tr>
<td>LU-1: Proposed residential land uses on the Napa Pipe sites could conflict with adjacent industrial uses.</td>
<td>S</td>
<td>LTS</td>
<td>LU-1: In compliance with Action Item AG/LU-94.1 of the Napa County General Plan, future development on the Napa Pipe sites will be required to include design features to buffer proposed residential uses from industrial uses. Such features shall include, but are not limited to:  ♦ Buffering and visual screening from existing industrial uses.  ♦ Design features that include physical buffers and design features, such as vegetation, landscape features and walls.  ♦ Building placement and orientation that physically separates new development from incompatible operations of adjacent uses, such as truck traffic, odors and stationary noise sources.  ♦ Measures to address noise and vibration.</td>
</tr>
<tr>
<td>LU-2: Proposed land uses on the Napa Pipe sites could conflict with the existing Union Pacific Railroad line bisecting the project site.</td>
<td>S</td>
<td>LTS</td>
<td>LU-2: The Napa Pipe developer and the County will coordinate with staff from the Public Utilities Commission and Union Pacific to identify desired railroad crossings and implement required safety equipment and improvements. Requirements may include signs, audible signals, gates that close when a train approaches and fencing along other sections of the right of way. These or other, similar required improvements will be installed by the developer during construction of roads and other infrastructure on site. The developer will be responsible for making any modifications that are needed to existing crossings, and for constructing new crossings acceptable to the Public Utilities Commission.</td>
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</table>

LTS = Less Than Significant  S = Significant  SU = Significant Unavoidable Impact
### TABLE 2-1  SUMMARY OF IMPACTS AND MITIGATION MEASURES (CONTINUED)

<table>
<thead>
<tr>
<th>Significant Impact</th>
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<th>Mitigation Measures</th>
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<tr>
<td><strong>Population, Housing and Employment</strong></td>
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<tr>
<td>POP-1: The housing programs and sites included in the proposed Housing Element could generate units potentially in excess of ABAG population projection for 2015. Because there are no feasible measures to mitigate this impact to a less-than-significant level, this impact is significant and unavoidable.</td>
<td>SU</td>
<td>There are no feasible measures to mitigate this impact to a less-than-significant level. Therefore, this impact is significant and unavoidable.</td>
<td></td>
</tr>
<tr>
<td>POP-2: The proposed Housing Element would contribute to the General Plan’s significant and unavoidable cumulative impact resulting from exceeding ABAG’s regional population projections and the County’s 1 percent population growth standard derived from the Growth Management System. Because there are no feasible measures to mitigate this impact to a less-than-significant level, the proposed project contributes to a significant and unavoidable cumulative impact.</td>
<td>SU</td>
<td>There are no feasible measures to mitigate this cumulative impact to a less-than-significant level. Therefore, this cumulative impact is significant and unavoidable.</td>
<td></td>
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<tr>
<td><strong>Transportation</strong></td>
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<td>TRAF-1: Project-related traffic would increase the V/C ratio by more than 5 percent at the unsignalized intersection of Deer Park Road/Silverado Trail (Intersection 3) during the AM peak hour under Year 2015 and Cumulative (Year 2030) conditions. Unsignalized intersection operations would degrade from an acceptable LOS C to an unacceptable LOS E in Year 2015 and LOS F in</td>
<td>S</td>
<td>TRAF-1: The County Public Works Department shall monitor operation of the intersection of Deer Park/Silverado Trail and convert the traffic signal equipment already installed at this intersection to operate as a standard traffic signal when warranted by delays. At the same time, each intersection approach shall be re-striped and/or reconfigured to provide, at a minimum, separate left-turn lanes and combined through/right-turn lanes.</td>
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LTS = Less Than Significant  S = Significant  SU = Significant Unavoidable Impact
**Table 2-1 Summary of Impacts and Mitigation Measures (continued)**

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<th>Mitigation Measures</th>
<th>Significance With Mitigation</th>
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<tr>
<td>Cumulative (Year 2030) during the PM peak traffic hour due to project related traffic.</td>
<td>S</td>
<td>TRAF-2: The intersection of State Route 29/ State Route 128 in Rutherford shall be signalized, or improved with an alternate configuration to provide acceptable operations prior to 2015. The final configuration will be determined by Caltrans in consultation with the County Traffic Engineer and will be based on actual volumes and conditions at the intersection. As a State highway, State Route 29 is under Caltrans jurisdiction.</td>
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<tr>
<td><strong>TRAF-2</strong>: Project-related traffic would increase the V/C ratio by more than 5 percent at the unsignalized intersection of St. Helena Highway (State Route 29)/Rutherford Road (State Route 128) (Intersection 4) during both the AM and PM peak hours under Year 2015 and Cumulative (Year 2030) conditions.</td>
<td>S</td>
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<td><strong>TRAF-3</strong>: Operations at the unsignalized intersection of Trancas Street/Monticello Road (State Route 121)/Silverado Trail (State Route 121) (Intersection 8) would degrade from an acceptable LOS D during the AM peak traffic hour and LOS C during the PM peak traffic hour to an unacceptable LOS F during both the AM and PM peak traffic hours under Year 2015 and Cumulative (Year 2030) conditions. Project-related traffic would increase the V/C ratio by more than 5 percent at this intersection.</td>
<td>S</td>
<td>TRAF-3: The County Public Works Department shall monitor operations at the intersection of Trancas/Monticello Road/Silverado Trail and shall provide for signalization or other improvements in order to provide acceptable operations (LOD D or better) as needed before 2030. The intersection contains a Caltrans controlled facility.</td>
<td>LTS</td>
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<tr>
<td><strong>TRAF-4</strong>: Project-related traffic would increase the V/C ratio by more than 5 percent at the signalized intersection of Imola Avenue (State Route 121)/Soscol Avenue (State Route 121/221) (Intersection 12) during both the AM and PM peak hours under Year 2015 conditions.</td>
<td>S</td>
<td>TRAF-4: The intersection of Imola/Soscol (State Route 121 and 121/221) shall be reconstructed to provide an additional left-turn lane on the eastbound approach, an exclusive right-turn lane on the westbound approach, and an additional through lane on Soscol Avenue in both directions. Protected phasing shall be provided for the eastbound and westbound left-turn movements. Right-of-way acquisition may be required as part of this widening.</td>
<td>LTS</td>
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LTS = Less Than Significant  S = Significant  SU = Significant Unavoidable Impact
<table>
<thead>
<tr>
<th>Significant Impact</th>
<th>Significance Before Mitigation</th>
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<th>Mitigation Measures</th>
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</thead>
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<tr>
<td>TRAF-4 continued</td>
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<td>This mitigation measure would be consistent with recommendations from previous studies in the City of Napa. However, such an extensive widening of roadways at this intersection would substantially increase pedestrian crossing distances and may not be consistent with the County’s and City’s desire to promote transit and bicycling as alternative transportation modes. This intersection is located within the City of Napa and includes a Caltrans controlled facility. If Mitigation Measure TRAF-4 were implemented under these conditions, the intersection would continue to operate at LOS F in the AM and PM peak hours, but the capacity of the intersection would be increased, so Housing Element-related traffic would no longer create an increase of over 5 percent to the V/C ratio. Therefore, the impact of the proposed Housing Element would be reduced to a less-than-significant level.</td>
</tr>
<tr>
<td>TRAF-5: Project-related traffic would increase the V/C ratio by more than 5 percent at the signalized intersection of Imola Avenue (State Route 121)/Soscol Avenue (State Route 121/221) (Intersection 12) during both the AM and PM peak hours under Cumulative (Year 2030) conditions.</td>
<td>S</td>
<td>LTS</td>
<td>TRAF-5: To achieve baseline conditions operations (LOS F) under Year 2030 conditions at the intersection of Imola/Soscol (State Route 121 and 121/221), the following configuration shall be constructed:  ♦ Northbound: two left-turn, three through, and one right-turn lane  ♦ Southbound: two left-turn, three through, and one right-turn lane  ♦ Eastbound: one left-turn, two through, and one right-turn lane (right-turn lane shall have overlap phasing during the AM peak hour)  ♦ Westbound: one left-turn, two through, and one right-turn lane. As with Mitigation Measure TRAF-4, this intersection is located within the City of Napa and includes a Caltrans controlled facility. If Mitigation Measure TRAF-5 were implemented, the intersection would continue to operate at LOS F in the AM and PM peak hours, but the capacity of the intersection would be increased, so Housing Element-related traffic would no longer create an increase</td>
</tr>
</tbody>
</table>

LTS = Less Than Significant  S = Significant  SU = Significant Unavoidable Impact
<table>
<thead>
<tr>
<th>Significant Impact</th>
<th>Significance Before Mitigation</th>
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<th>Significance With Mitigation</th>
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<tr>
<td>TRAF-5 continued</td>
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<td>of over 5 percent to the V/C ratio. Therefore, the impact of the proposed Housing Element would be reduced to a less-than-significant level. In order to achieve acceptable LOS D or better operations, advanced intersection treatment (e.g. grade-separation, continuous-flow operations) would be needed.</td>
<td>LTS</td>
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<tr>
<td>TRAF-6 and 7: Operations at the signalized intersection of Carneros Highway (State Route 121)/Sonoma Highway (State Route 12/ State Route 29) (Intersection 13) would degrade from LOS D to LOS F under Year 2015 conditions during both the AM and PM peak hours and project-related traffic would increase the V/C ratio by more than 5 percent. Also, operations would degrade from LOS D to LOS F under Cumulative (Year 2030) conditions during both the AM and PM peak hours, with project-related traffic increasing the V/C ratio by more than 5 percent.</td>
<td>S</td>
<td>TRAF-6 and 7: A second eastbound right-turn lane shall be constructed at the intersection of State Route 121/ State Route 29 prior to 2015 to achieve acceptable operations at this intersection and additional northbound and southbound through lane shall be constructed prior to 2030 if necessary to maintain acceptable operating conditions. As a State highway, State Route 29 is under Caltrans jurisdiction.</td>
<td>LTS</td>
</tr>
<tr>
<td>TRAF-8: Project-related traffic would increase the V/C ratio by more than 5 percent at the signalized intersection of Sonoma Highway (State Route 12)/State Route 29/Napa Vallejo Highway (State Route 221) (Intersection 14) during both the AM and PM peak hours under Year 2015 and Cumulative (Year 2030) conditions.</td>
<td>S</td>
<td>TRAF-8: Construct a southbound left-turn fly-over at the intersection of State Route 12/29 and State Route 221 and restrict the movements made at the at-grade intersection to the following:  ♦ Northbound and southbound right-turns  ♦ Eastbound and westbound through and right-turns  At this time, Napa County and Caltrans are cooperating to develop a preferred design for improvements to this intersection. This mitigation measure is the current preferred design.</td>
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### Table 2-1  Summary of Impacts and Mitigation Measures (continued)

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<tr>
<td>TRAF-8 continued</td>
<td></td>
<td>This intersection currently functions at LOS F in both the AM and PM peak periods under existing conditions. This improvement, which would be needed regardless of the impacts of the proposed Housing Element, may have its own traffic circulation impacts and would require a separate and thorough environmental review process. If this improvement is constructed and adequate local access is provided, impacts to this intersection would be reduced to a less-than-significant level. As a State highway, State Route 29 is under Caltrans jurisdiction.</td>
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<tr>
<td>TRAF-9: Operations at the signalized intersection of Jameson Canyon Road (State Route 12)/State Route 29 (Intersection 15) would degrade from an acceptable LOS D to LOS F in the PM peak hour under Year 2015 and Cumulative (Year 2030) conditions. Project-related traffic would increase the V/C ratio by more than 5 percent in the AM peak hour for the intersection currently operating at an unacceptable LOS F.</td>
<td>S</td>
<td>TRAF-9: The intersection of State Route 12 and State Route 29 shall be reconstructed as a grade-separated interchange as proposed in the Napa County General Plan. Construction of this interchange would improve operations at this location to acceptable levels and would reduce the project’s impact to a less-than-significant level. As a State highway, State Route 29 is under Caltrans jurisdiction.</td>
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<tr>
<td>TRAF-10: Operations at the signalized intersection of 1st Street/Silverado Trail (State Route 121) (Intersection 9) would degrade from an acceptable LOS B to an unacceptable LOS F during the PM peak traffic hour under Cumulative (Year 2030) Conditions.</td>
<td>S</td>
<td>TRAF-10: The intersection of 1st Street/Silverado Trail in the City of Napa shall be improved by constructing a second southbound through lane on Silverado Trail (State Route 121). Widening Silverado Trail at this location beyond a two-lane roadway would be in direct conflict with the City of Napa’s General Plan and would require City approval following a General Plan amendment.</td>
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## TABLE 2-1  **SUMMARY OF IMPACTS AND MITIGATION MEASURES** (CONTINUED)

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<tr>
<td>TRAF-11: Operations at the signalized intersection of 1st Street/Soscol Avenue (Intersection 10) would degrade from an acceptable LOS B to an unacceptable LOS F during the PM peak traffic hour under Cumulative (Year 2030) conditions.</td>
<td>S</td>
<td>TRAF-11: The only possible solution for this cumulative impact would be to construct a third through lane on both the northbound and southbound approaches of Soscol Avenue, including widening of newly-constructed bridge structures to the north and south of the intersection. Widening Soscol Avenue beyond a four-lane roadway would be in direct conflict with the City of Napa’s General Plan and widening of the new bridge structures is not considered reasonable or feasible. Therefore, this cumulative impact is considered significant and unavoidable.</td>
<td>SU</td>
</tr>
<tr>
<td>TRAF-12: Operations at the signalized intersection of Soscol Avenue/Silverado Trail (State Route 121) (Intersection 11) would degrade from an acceptable LOS C in the AM peak hour and LOS B in the PM peak hour to an unacceptable LOS E during both the AM and PM peak traffic hours under Cumulative (Year 2030) conditions.</td>
<td>S</td>
<td>TRAF-12: The intersection of Soscol/Silverado Trail shall be reconstructed to include an exclusive westbound left-turn lane while maintaining the shared left/right-turn lane. This would achieve an acceptable LOS C during both the AM and PM peak hours. This intersection is located within the City of Napa and includes a Caltrans controlled facility. If the identified mitigation were implemented under these conditions, the impact would be reduced to a less-than-significant level.</td>
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<tr>
<td>TRAF-13: The proposed Housing Element Update would conflict with adopted policies, plans or programs supporting alternative transportation because the remote locations of the housing sites and the lack of alternative transportation facilities in these remote locations would not promote the use of bicycle, pedestrian, or transit facilities.</td>
<td>S</td>
<td>TRAF-13: The County shall work with VINE to establish transit stops, within ¼-mile of each proposed housing site, either by rerouting existing transit routes or by establishing new routes, prior to occupancy of the units. Alternatively, park-and-ride areas shall be provided near the sites. In addition, adequate bicycle and pedestrian connections shall be provided to these transit stops and adjacent land uses. Class II bicycle lane striping or Class III shared roadway signage shall be added to roadways connecting housing sites to employment or retail centers.</td>
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### Table 2-1  **Summary of Impacts and Mitigation Measures** (continued)

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<tr>
<td>TRAF-14: The proposed Housing Element would contribute significant levels of vehicular traffic to roadway segments identified in the General Plan EIR as operating at an unacceptable level of service with cumulative traffic in Year 2030. In addition, development on the Napa Pipe site may significantly increase delays and/or contribute to significant cumulative delays at intersections not selected for analysis in this EIR.</td>
<td>S</td>
<td>TRAF-14: The County shall require site-specific evaluation and project-specific analysis of the Napa Pipe project prior to approval of a development agreement. The analysis shall extend beyond the intersections included in this program-level EIR to include all road segments and intersections that may be significantly impacted, and the developer shall be required to mitigate impacts as feasible. Potential impacts and mitigation measures are expected to resemble those outlined in the draft transportation study for the project cited in this EIR, although the feasibility of mitigation has not been determined yet, and this impact is therefore considered significant and unavoidable.</td>
<td>SU</td>
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<tr>
<td><strong>Biological Resources</strong></td>
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<tr>
<td>BIO-1: Angwin Sites A and B, Moskowite Corner Sites A, B, C and D, and Spanish Flat Sites B, D, E and F may contain special-status plant species which, if extant, may be negatively affected by housing development.</td>
<td>S</td>
<td>BIO-1: Prior to issuance of a building permit for development on Angwin Sites A and B, Moskowite Corner Sites A, B, C and D, and Spanish Flat Sites B, D, E and F, the County shall ensure that the property owner or developer retains a qualified biologist to undertake confirmation surveys for special-status plant species. Detailed surveys shall be conducted during the flowering period by a qualified botanist to confirm absence of any special-status plant species from the vicinity of proposed improvements. The surveys shall be conducted consistent with the latest surveys guidelines of the CDFG, and include sufficient field surveys to allow for a determination on presence or absence. If populations of any special-status plant species are encountered on any site, housing development on the site shall be designed to avoid the identified populations in compliance with State and federal law.</td>
<td>LTS</td>
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### Table 2-1  Summary of Impacts and Mitigation Measures (continued)

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<tr>
<td><strong>BIO-2:</strong> Angwin Site A, Moskowite Corner Sites A, B and C, Spanish Flat Sites C, D and F and Napa Pipe Sites A and B may contain aquatic special-status animal species that could be affected by housing development.</td>
<td>S</td>
<td><strong>BIO-2:</strong> Prior to issuance of a building permit for development on Angwin Site A, Moskowite Corner Sites A, B and C, Spanish Flat Sites C, D and F, and Napa Pipe Sites A and B, the County shall ensure that the property owner or developer retains a qualified biologist to undertake confirmation surveys for aquatic special-status animal species shall be conducted on the sites listed above. Detailed surveys shall be conducted by a qualified biologist to confirm absence of any aquatic special-status animal species from the vicinity of proposed improvements. This may include conduct of protocol surveys for California red-legged frog if development is proposed within 300 feet of potential breeding or dispersal habitat is present, which is possible on Angwin Site A, Moskowite Corner Sites A, B and C, and Spanish Flat Sites C and D. If populations of any aquatic special-status animal species are encountered on any site, housing development on the site shall be designed to avoid the identified populations and habitat in compliance with State and federal law.</td>
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<tr>
<td><strong>BIO-3:</strong> Angwin Sites A and B, Moskowite Corner Sites A, B, C and D, Spanish Flat Sites B, D, E and F and Napa Pipe Sites A and B may contain nesting habitat for special-status bird species that could be affected by housing development.</td>
<td>S</td>
<td><strong>BIO-3:</strong> Prior to issuance of a building permit for development on Angwin Sites A and B, Moskowite Corner Sites A, B, C and D, Spanish Flat Sites B, D, E and F, and Napa Pipe Sites A and B, the County shall ensure that the property owner or developer retains a qualified biologist to undertake pre-construction nesting surveys for special-status bird species shall be conducted on the sites listed above. The pre-construction nesting surveys shall be conducted for loggerhead shrike, burrowing owl, and tree nesting raptors at sites with a potential for nesting activity if earthmoving and construction is to be initiated during the months of April through August. The surveys shall be conducted by a qualified biologist no more than 30 days prior to initiation of grading. If any special status raptor nests are found during pre-construction surveys, a 500-foot no-disturbance buffer will be created around the nest during the breeding season or until all young have fledged. If nests of other special status birds are found during pre-construction surveys, a 250-foot buffer zone will be created consistent...</td>
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## Table 2-1  Summary of Impacts and Mitigation Measures (continued)

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<tr>
<td><strong>BIO-4 continued</strong></td>
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<td>with California Department of Fish and Game avoidance guidelines. If preconstruction surveys determine that special status species are absent, no further mitigation is required. If construction activities are suspended for more than two weeks, the area must be resurveyed.</td>
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<tr>
<td><strong>BIO-4</strong>: On Angwin Sites A and B, Moskowite Corner Sites A, B, C and D, Spanish Flat Sites B, C, D, E and F, and Napa Pipe Sites A and B, proposed development could affect sensitive habitats or natural communities unless they are adequately protected.</td>
<td>S</td>
<td><strong>BIO-4</strong>: Prior to issuance of a building permit for development on Angwin Sites A and B, Moskowite Corner Sites A, B, C and D, Spanish Flat Sites B, C, D, E and F, and Napa Pipe Sites A and B, the County shall ensure that the property owner or developer retains a qualified biologist to accurately map locations supporting sensitive habitats and natural communities and that development plans for individual sites, and construction on these sites, avoids these locations. If sensitive habitats and natural communities include wetlands, off-site restoration with approval from the US Army Corps of Engineers may occur in place of avoiding development on wetlands.</td>
<td><strong>LTS</strong></td>
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<tr>
<td><strong>BIO-5</strong>: Proposed development on Angwin Sites A and B, Moskowite Corner Sites A, B, C and D, Spanish Flat Sites B, C, D, E and F, and Napa Pipe Sites A and B could result in the obstruction of wildlife movement corridors.</td>
<td>S</td>
<td><strong>BIO-5</strong>: Prior to issuance of a building permit for development on Angwin Sites A and B, Moskowite Corner Sites A, B, C and D, Spanish Flat Sites B, C, D, E and F, and Napa Pipe Sites A and B, the County shall ensure that the property owner or developer retains a qualified biologist to survey possible wildlife movement corridors. If native resident or migratory wildlife corridors are found to be used on the site, measures to minimize restricted wildlife movement shall be developed in consultation with a qualified biologist, such as development and fencing restrictions, road design and use of critter culverts. In addition, measures shall be tailored to the needs of the species that are found to use the corridor.</td>
<td><strong>LTS</strong></td>
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<tr>
<td><strong>BIO-6:</strong> Proposed development on Angwin Sites A and B, Moskowite Corner Sites A, B, C and D, Spanish Flat Sites B, C, D, E and F, and Napa Pipe Sites A and B could conflict with a number of policies in the Conservation Element intended to protect biological resources, including policies to protect native vegetation, sensitive wildlife habitat and mature oaks.</td>
<td><strong>S</strong></td>
<td>This impact will be mitigated to a less-than-significant level by the implementation of Mitigation Measures BIO-1, BIO-2, BIO-3, BIO-4 and BIO-5, above. No new mitigation measure is required.</td>
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<td><strong>Fisheries</strong></td>
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<tr>
<td><strong>FIS-1:</strong> Future development on Angwin Site A; Moskowite Corner Sites A, B and C; and Spanish Flat Site F could adversely affect riparian habitat.</td>
<td><strong>S</strong></td>
<td>Compliance with the County’s conservation regulations and Mitigation Measure BIO-4 would ensure that during preparation of development plans for individual sites, locations supporting riparian vegetation are accurately mapped, and that development avoids these areas.</td>
<td><strong>LTS</strong></td>
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<tr>
<td><strong>Noise</strong></td>
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<tr>
<td><strong>NOISE-1:</strong> At Angwin Sites A and B, Moskowite Corner Sites A, B and C, and Napa Pipe Sites A and B, the Housing Element Update would allow residential units to be constructed where noise levels would exceed the Napa County Noise and Land Use Compatibility Standards or the Napa County Noise Ordinance limits.</td>
<td><strong>S</strong></td>
<td><strong>NOISE-1:</strong> Sound-rated building construction shall be used to achieve acceptable indoor noise levels in units proposed in Angwin Sites A and B, Moskowite Corner Sites A, B and C, and Napa Pipe Sites A and B. The specification of these treatments shall be developed during the architectural design of the buildings. In general, rooms along the perimeter of the site shall require sound rated windows. All residential units in the project shall require mechanical ventilation to allow for air circulation while windows are closed for noise control.</td>
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### Summary of Impacts and Mitigation Measures (continued)

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<tr>
<td><strong>NOISE-2</strong>: Housing development on Napa Pipe Sites A and B would be constructed in the vicinity of a railroad and a quarry, potentially exposing sensitive uses to groundborne vibration.</td>
<td>S</td>
<td><strong>NOISE-2a:</strong> Consistent with General Plan Policy CC-40, residences proposed within 100 feet of any significant source of groundborne vibration, a vibration study shall be conducted prior to construction by a qualified consultant to ensure that residents would not be exposed to excessive vibration levels that be disruptive (e.g. potential to interrupt sleep) or cause structural damage. The results of the study shall include performance standards to fully mitigate vibration impacts, which may take the form of building setbacks, site design, soil compaction/grouting, and other appropriate methods.</td>
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<tr>
<td><strong>NOISE-2b</strong>: Residences proposed within proximity of the Syar Quarry or haul roads leading to the Syar Quarry shall be buffered and constructed to avoid significant disturbance related to groundborne vibration (e.g. potential to interrupt sleep or cause structural damage). A vibration study shall be conducted by a qualified consultant prior to construction to determine the extent of the buffer and other required measures related to building/foundation design. Prior to issuance of a building permit, the property owner shall demonstrate how study recommendations will be implemented to fully mitigate vibration impacts.</td>
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<tr>
<td><strong>NOISE-3</strong>: At Angwin Site B, the Housing Element Update would allow residential units to be constructed where aircraft noise levels would exceed the Napa County Noise and Land Use Compatibility Standards or interior intermittent noise level limits.</td>
<td>S</td>
<td><strong>NOISE-3</strong>: An avigation easement shall be recorded for all new residential development, informing future residents of the presence of the airport and its potential for creating current and future noise.</td>
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</table>
| **NOISE-4**: The proposed Housing Element Update would contribute to a cumulatively considerable increase in traffic noise along roadways in the county. | SU | There are no feasible measures to mitigate this cumulative impact to a less-than-significant level. Therefore, this cumulative impact is significant and unavoidable. | }

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### Table 2-1  Summary of Impacts and Mitigation Measures (continued)

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<td><strong>Air Quality</strong></td>
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<tr>
<td>AIR-1: The proposed Housing Element Update would conflict with regional clean air planning efforts, since population and vehicle miles traveled would increase at a greater rate than projections used for air quality planning. The projected growth could lead to an increase in the region’s VMT, contributing to the on-going air quality issues in the Bay Area. In addition, the proposed Housing Element Update would contribute to a cumulatively significant impact related to conflicts with regional clean air planning efforts because population and vehicle miles traveled will be greater than projections used for air quality planning under the General Plan.</td>
<td>SU</td>
<td>There are no feasible measures that could mitigate this cumulative impact to a less-than-significant level. Therefore, the cumulative impact remains <strong>significant and unavoidable</strong>.</td>
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<tr>
<td>AIR-2: Implementation of the proposed Housing Element Update would contribute to an increase in GHG emissions from vehicle transportation and building energy use, contributing to increases in atmospheric GHG concentrations that lead to global warming. The proposed project would also contribute to a cumulatively significant impact under the General Plan related to GHG emissions.</td>
<td>SU</td>
<td>Although the County is undertaking measures to address GHG emissions consistent with policies and action items in the 2008 General Plan, there are no identified feasible measures that could mitigate this cumulative impact to a less-than-significant level. Therefore, the cumulative impact remains <strong>significant and unavoidable</strong>.</td>
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## TABLE 2-1  SUMMARY OF IMPACTS AND MITIGATION MEASURES (CONTINUED)

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<tr>
<td><strong>Human Health and Risk of Upset</strong></td>
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<tr>
<td>HUM-1: Spanish Flat Sites B and F are listed with the County as contaminated with hazardous materials. Construction of housing on these sites could constitute a significant impact.</td>
<td>S</td>
<td>HUM-1: Prior to development approval, construction at these sites shall be subject to Phase I and Phase II studies. Any contamination shall be cleaned up and disposed of as per local, State and federal law.</td>
<td>LTS</td>
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<tr>
<td>HUM-2: The Napa Pipe sites are currently listed by the California Department of Toxic Substances Control as a leaking underground fuel tank site as well as a spill, leak, investigation or cleanup site. A soil and groundwater investigation has been conducted and a remediation action plan (RAP) was developed under the supervision of the San Francisco Bay Regional Water Quality Control Board. Until implementation of the RAP has been completed, the project would result in a significant impact creating a hazard to the public or environment.</td>
<td>S</td>
<td>HUM-2: Prior to construction, the property owner and/or developer shall implement the approved Remedial Action Plan consistent with the Remedial Design and Implementation Plan, and obtain clearance from the Regional Water Quality Control Board. These measures would ensure that construction activities and site reuse are carried out in a manner that addresses environmental and human health risks associated with contaminated soil and groundwater.</td>
<td>LTS</td>
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<tr>
<td>HUM-3: Future housing development under the programs and policies of the proposed Housing Element and on the Angwin, Moskowite Corner and Spanish Flat sites has the potential to expose people or structure to risks involving wildland fires.</td>
<td>S</td>
<td>HUM-3: Prior to issuance of a building permit for development on the Angwin, Moskowite Corner and Spanish Flat sites, the County shall ensure that the following conditions will be met to address potential risks involving wildland fires: a. Fire apparatus access roads shall have an unobstructed width of not less than 20 feet and an unobstructed vertical clearance of not less than 15 feet. These roadway widths allow for traffic to travel in both directions on the roadway but do not allow for parking. If parking is allowed on only one side of the roadway, the width shall be 30 feet, and parking on both sides of the roadway requires the roadway to be 40 feet wide.</td>
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<td>b.</td>
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<td>Fire department access roads shall be provided to within 150 feet of all portions of all structures.</td>
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<td>c.</td>
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<td>Two means of access/egress shall be provided for any development that serves 25 or more sites.</td>
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<td>d.</td>
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<td>Dead end fire apparatus access roads in excess of 150 feet in length shall be provided with approved provisions for the turning around of fire apparatus.</td>
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<td>e.</td>
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<td>Fire department access roads shall comply with the Napa County Road and Street Standards for road surface, turning radius, grade and marking.</td>
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<td>f.</td>
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<td>Proposed developments located in a Very High Fire Hazard Severity Zone shall use Class-A rated roofing materials on all structures.</td>
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<td>g.</td>
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<td>A comprehensive Vegetation Management Plan (VMP) shall be developed and submitted to the Napa County Fire Marshal’s Office and the California Department of Forestry for approval for developed lands. This VMP shall include fuel modification, treatment zones, methods of treatment, maintenance and responsibility. Prior to the start of fire season every year, the owner of the development would be required to verify to the Fire Department compliance with the approved VMP.</td>
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<td>h.</td>
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<td>Development approvals for residential development projects, serving 11 to 350 parcels or sites, shall provide 1,000 gallons per minute for a two-hour flow duration totaling 120,000 gallons of water storage to be available only for fire fighting operations. The Fire Department is willing to accept automatic fire sprinkler systems installed and maintained to the National Fire Protection Association (NFPA) Standard 13-D (Sprinkler Systems in One- and Two- Family Dwellings) throughout all of the residences as an alternate methods or material request.</td>
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<td>i. The private fire service mains shall be installed and maintained in accordance to the National Fire Protection Standard #24 (Installation of Private Fire Service Mains and Their Appurtenances 2007 edition). Fire service mains shall be a minimum of 6 inches in diameter, listed for fire protection use, and in compliance with American Water Works Association standards.</td>
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<td>j. The location, number and type of fire hydrants connected to the water supply shall be in accordance with the California Fire Code, 2007 edition. All hydrants shall have two 2½-inch National Hose male connections and one 4½-inch National Hose male connection. Hydrants shall be spaced 500 feet apart with a maximum travel distance of 250 feet to any hydrant.</td>
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<td>k. The approved address numbers shall be placed on each building in such a position to be plainly visible and legible from the street fronting the property. The address numbers shall be a minimum of 3 inches in size, visible from both directions on the road fronting the property, reflective and contrasting in color with the background.</td>
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<td>l. The development approval shall have a written evacuation plan approved by the Napa County Fire Marshal’s Office and shall post the fire safety rules and regulations with the evacuation plan.</td>
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<td>m. Technical assistance in the form of a fire protection engineer or consultant acceptable, and reporting directly, to the NCFD shall be provided by the applicant at no charge to the County (California Fire Code section 103.1.1) for the independent peer review of alternate methods proposals.</td>
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<td>n. Plans detailing compliance with the fire and life safety conditions-of-approval shall be submitted to the Napa County Fire Marshal’s Office for review and approval prior to building permit issuance and/or as described above.</td>
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<tr>
<th>Significant Impact</th>
<th>Significance Before Mitigation</th>
<th>Mitigation Measures</th>
<th>Significance With Mitigation</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEO-1: Housing developed on any of the proposed housing sites could result in the exposure of people, structures and/or property to seismic ground shaking or other geologic risks.</td>
<td>S</td>
<td>GEO-1: Consistent with Napa County General Plan Policy SAF-8, prior to development of all housing sites, a design-level geotechnical report shall be prepared by a qualified geotechnical engineer and engineering geologist. The report shall include a detailed geologic map showing all landslides, fill areas, erosion areas, faults and other pertinent geologic and seismic features. The report shall include recommendations for fill placement, cut and fill slope inclinations, slope stabilization, old fill mitigation, liquefaction mitigation, earthquake design criteria, treatment of expansive soils and surface and subsurface drainage. In addition, the report shall provide design criteria for facilities such as retaining walls, pavements, and foundations. The report shall be based on adequate subsurface investigation. At a minimum, subsurface investigations shall be conducted in all areas where cut or fill slopes greater than ten feet in vertical height are planned. Potentially unstable slopes shall be mitigated such that the risk of instability during the life of the project is very low. Slope instability can be effectively mitigated through the use of relatively flat slopes, retaining walls, or reconstructing slopes with compacted fill. Specific measures shall be included in the design-level geotechnical report. It may be desirable to divide the geotechnical investigations into planning-level and design-level phases. At a minimum, the planning-level phase shall be completed prior to approval of the Tentative Map. The design-level report shall be completed prior to approval of the final grading plan.</td>
<td>LTS</td>
</tr>
</tbody>
</table>

LTS = Less Than Significant  S = Significant  SU = Significant Unavoidable Impact
### Table 2-1  Summary of Impacts and Mitigation Measures (continued)

<table>
<thead>
<tr>
<th>Significant Impact</th>
<th>Significance Before Mitigation</th>
<th>Mitigation Measures</th>
<th>Significance With Mitigation</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEO-1 continued</td>
<td></td>
<td>Cut and fill slopes shall be constructed in accordance with modern geotechnical standards, including the County grading ordinance and the International Building Code. The applicable standards shall be those in effect at the time the grading plan accepted by the County.</td>
<td>SU There are no feasible measures that could mitigate this cumulative impact to a less-than-significant level. Therefore, the cumulative impact remains significant and unavoidable.</td>
</tr>
<tr>
<td>GEO-2: The Housing Element would increase the county’s population and the number of structures with a potential for seismic-related risk. Thus the proposed Housing Element would have a cumulatively considerable impact related to seismic-related ground shaking and ground failure.</td>
<td>SU</td>
<td>There are no feasible measures that could mitigate this cumulative impact to a less-than-significant level. Therefore, the cumulative impact remains significant and unavoidable.</td>
<td></td>
</tr>
</tbody>
</table>

**Hydrology and Water Quality**

| HYDRO-1: Within the Milliken-Sarco-Tulucay (MST) groundwater deficient area, new second units, new units accessory to commercial uses, and new units permitted as a result of re-designation of 60 parcels in the Monticello Road area from RR to UR could exacerbate groundwater problems. | LTS HYDRO-1: To avoid exacerbating existing groundwater deficiencies, property owners seeking approval for new second units, accessory units or subdivisions within the MST as a result of Housing Element policies and programs shall be required to demonstrate the availability of municipal water supplies, or to demonstrate that potential groundwater use will be fully offset by reductions in the use of groundwater elsewhere on the affected parcel(s). | LTS |

LTS = Less Than Significant  S = Significant  SU = Significant Unavoidable Impact
### Table 2-1  Summary of Impacts and Mitigation Measures (Continued)

<table>
<thead>
<tr>
<th>Significant Impact</th>
<th>Significance Before Mitigation</th>
<th>Significance With Mitigation</th>
<th>Mitigation Measures</th>
</tr>
</thead>
<tbody>
<tr>
<td>HYDRO-2: New development on the Angwin sites that relies on the PUC groundwater system conflicts with General Plan Policy AG/LU-61, which prevents a net increase of groundwater use within the Conn-Creek-Upper Reach Local Drainage. In addition, there is insufficient data available to determine whether there is adequate groundwater supply.</td>
<td>S</td>
<td>LTS</td>
<td>HYDRO-2: To comply with General Plan Policy AG/LU-61, the County shall require use of groundwater on the Angwin sites to be fully offset elsewhere in the Conn-Creek-Upper Reach Local Drainage by implementing water conservation strategies – such as using low-flow toilets, fixing leaky pipes and using reclaimed water for irrigation purposes – or other strategies to decrease the use of groundwater associated with existing activities in the watershed. Alternatively, the developer may demonstrate that the project would have no impact on the long term sustainability of groundwater supplies by providing monitoring data and technical analyses or by providing evidence of an alternative water source prior to issuance of a building permit.</td>
</tr>
<tr>
<td>HYDRO-3: Although new development on the Moskowite Corner sites would rely on surface water from the Moskowite Reservoir, it is not certain whether the availability and reliability of the surface water supply from the Moskowite Reservoir will be sufficient to support the proposed housing development. Therefore, groundwater may be needed for this development, and there is insufficient data available to determine whether there is adequate groundwater supply to serve development on the Moskowite Corner sites.</td>
<td>S</td>
<td>LTS</td>
<td>HYDRO-3: Prior to approving a building permit for development on the Moskowite Corner sites, the property owner and/or developer shall be required to demonstrate adequate capacity from surface water sources. If there is not adequate long-term supply from surface water sources, groundwater shall be explored as an alternative or emergency source of potable water, as well as the potential to offset groundwater use by using reclaimed water for irrigation purposes in the watershed.</td>
</tr>
</tbody>
</table>

LTS = Less Than Significant  S = Significant  SU = Significant Unavoidable Impact
## TABLE 2-1  SUMMARY OF IMPACTS AND MITIGATION MEASURES (CONTINUED)

<table>
<thead>
<tr>
<th>Significant Impact</th>
<th>Significance Before Mitigation</th>
<th>Mitigation Measures</th>
<th>Significance With Mitigation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cultural and Paleontological Resources</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CUL-1: Buried archaeological or paleontological resources could be present on any of the potential housing sites or lands to be developed under the proposed programs, and accidental discovery could occur during work on the sites. Disturbance of unknown archaeological or paleontological resources would be a significant impact.</td>
<td>S</td>
<td>CUL-1: Development under all of the programs and policies of the Housing Element and on all of the housing sites shall comply with Action Item CC-23.2 in the Community Character Element of the Napa County General Plan. Action Item CC-23.2 requires that the Planning Department be notified if any prehistoric, archaeological or paleontological artifact is uncovered during construction. In such an event, construction must cease and an archaeologist must be consulted to evaluate the findings and recommend actions to be taken.</td>
<td>LTS</td>
</tr>
<tr>
<td>CUL-2: Angwin Sites A and B contain prehistoric archaeological resources that have been tentatively classified as lithic scatter. Direct impacts to the resources could result from development activities including grading, excavation, and trenching. Indirect impacts could occur from collection of artifacts by development/construction personnel and increased pedestrian traffic.</td>
<td>S</td>
<td>CUL-2: Prior to issuance of a building permit, Angwin Sites A and B shall undergo further archaeological investigations to determine whether the cultural resources on these sites qualify as sparse lithic scatters (as defined by the State Historic Preservation Officer), or whether the resources are more significant archaeological sites. If the sites are found to consist solely of sparse lithic scatters, then they shall be treated as such following SHPO treatment plans and development may occur after proper treatment has been completed. If the sites are found to be more significant archaeological sites, then no development shall occur within the limits of the sites and the limits of the sites shall be fenced and excluded from development and construction activities.</td>
<td>LTS</td>
</tr>
<tr>
<td>CUL-3: Moskowite Corner Sites C and D contain prehistoric archaeological sites. Direct impacts could result from development activities including grading, excavation, and trenching. Indirect impacts could occur from collection of artifacts by development/construction personnel and increased pedestrian traffic.</td>
<td>S</td>
<td>CUL-3: No development shall occur within the limits of the known archaeological sites on Moskowite Corner Sites C and D. The limits of the archaeological site shall be fenced and excluded from development and construction activities. Construction, parking, equipment and materials storage, and all other development activities shall be restricted from the archaeological site. Development and construction personnel shall be restricted from the archaeological site.</td>
<td>LTS</td>
</tr>
</tbody>
</table>

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### Table 2-1  Summary of Impacts and Mitigation Measures (continued)

<table>
<thead>
<tr>
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<th>Significance Before Mitigation</th>
<th>Mitigation Measures</th>
<th>Significance With Mitigation</th>
</tr>
</thead>
<tbody>
<tr>
<td>CUL-4: Moskowite Corner Sites C and D contain buildings that could be significant cultural resources. Altering or demolishing these buildings would be a significant impact.</td>
<td>S</td>
<td>CUL-4: The existing buildings on Moskowite Corner Sites C and D shall be left intact, unless a survey of these buildings conducted following protocol established by the State Office of Historic Preservation determines that they are not eligible for inclusion on the California Register of Historical Resources.</td>
<td>LTS</td>
</tr>
<tr>
<td>CUL-5: The construction of housing on the Napa Pipe sites would result in the demolition of the Basalt Shipyard, a significant historic architectural resource, which would contribute to a cumulatively significant impact from the General Plan. With Mitigation Measure CUL-5, this impact would be reduced, but not avoided, and would remain significant and unavoidable.</td>
<td>SU</td>
<td>CUL-5: The Basalt Shipyard shall be evaluated for potential inclusion on the California Register, and if found eligible shall be photo-documented to the Historic American Buildings Survey (HABS) standards. Removal of this significant architectural resource would remain significant and unavoidable.</td>
<td>SU</td>
</tr>
<tr>
<td>CUL-6: Buried human remains could be present on any of the potential housing sites or lands to be developed under the proposed programs, and accidental discovery could occur during work on the sites. Disturbance of unknown human remains would be a significant impact.</td>
<td>S</td>
<td>CUL-6: Development under all of the programs and policies of the Housing Element and on all of the housing sites shall comply with Action Item CC-23.2 in the Community Character Element of the Napa County General Plan. Action Item CC-23.2 requires that construction must cease if human remain are found, and the County Coroner must be notified to determine if the remains are Native American, in which case CEQA procedures outlined in Section 15064.5 (d) and (e) shall must be followed.</td>
<td>LTS</td>
</tr>
</tbody>
</table>

#### Public Services and Utilities

<table>
<thead>
<tr>
<th>Significant Impact</th>
<th>Significance Before Mitigation</th>
<th>Mitigation Measures</th>
<th>Significance With Mitigation</th>
</tr>
</thead>
<tbody>
<tr>
<td>PUB-1: Development of the Napa Pipe sites would likely necessitate a new fire station to respond to service calls generated at the site. Construction and operation of new fire protection facilities would likely result in environmental impacts.</td>
<td>S</td>
<td>PUB-1: The County shall require the Napa Pipe developer to provide a new fire station on the site. New fire protection facilities must be sited appropriately to minimize potential environmental impacts associated with the construction and operation of the facility. In addition, fire protection facilities adequate to serve residents on the Napa Pipe sites must be in place prior to occupancy of proposed housing.</td>
<td>LTS</td>
</tr>
</tbody>
</table>

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**Table 2-1  ** SUMMARY OF IMPACTS AND MITIGATION MEASURES (CONTINUED)

<table>
<thead>
<tr>
<th>Significant Impact</th>
<th>Significance Before Mitigation</th>
<th>Mitigation Measures</th>
<th>Significance With Mitigation</th>
</tr>
</thead>
<tbody>
<tr>
<td>PUB-2: Development of the Angwin sites could necessitate a new sheriff station to respond to service calls generated at the site. Construction of new law enforcement facilities would potentially result in environmental impacts.</td>
<td>S</td>
<td>PUB-2: The County shall require that any new law enforcement facility in the Angwin area must be sited appropriately to minimize potential environmental impacts associated with the construction and operation of the facility.</td>
<td>LTS</td>
</tr>
<tr>
<td>PUB-3: The proposed Housing Element Update would contribute to a significant cumulative impact associated with the need for a new sheriff substation to serve the full buildout of the Napa Pipe site.</td>
<td>S</td>
<td>PUB-3: The County shall require that a new substation at Napa Pipe be sited to minimize potential environmental impacts, possibly in conjunction with a new fire station. In addition, development of a new sheriff sub-station at Napa Pipe will be required to comply with Napa County General Plan Policy SAF-34, which requires consultation with the Sheriff’s Department and the City of Napa Police Department.</td>
<td>LTS</td>
</tr>
<tr>
<td>PUB-4: PUC and SFWD have inadequate wastewater capacity to serve new units at Angwin and Spanish Flat proposed by the Housing Element Update.</td>
<td>S</td>
<td>PUB-4: No housing shall be built on the Angwin, Moskowite Corner or Spanish Flat sites until adequate wastewater services are available.</td>
<td>LTS</td>
</tr>
</tbody>
</table>

**Visual Resources, Light and Glare**

| VIS-1: Moskowite Corner Sites A and B are part of scenic vistas and visible from County-designated scenic routes. Due to the flat topography, new development could not be screened without blocking the scenic vista or viewshed of Highway 128. No feasible mitigation measure was identified to reduce this impact. Therefore, the impact of developing on Moskowite Corner Sites A and B is significant and unavoidable. | SU | There are no feasible measures to mitigate this impact to a less-than-significant level. Therefore, this impact is significant and unavoidable. |

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### Table 2-1 Summary of Impacts and Mitigation Measures (continued)

<table>
<thead>
<tr>
<th>Significant Impact</th>
<th>Significance Before Mitigation</th>
<th>Mitigation Measures</th>
<th>Significance With Mitigation</th>
</tr>
</thead>
<tbody>
<tr>
<td>VIS-2: Housing development on the Napa Pipe site will constitute a significant change in visual character and could impact view corridors to the Napa River from public rights-of-way such as State Route 29.</td>
<td>S</td>
<td>VIS-2: Prior to approval of a development agreement for the Napa Pipe site, require the creation of design guidelines and ensure their use to preserve view corridors to and from the Napa River.</td>
<td>LTS</td>
</tr>
</tbody>
</table>

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3 Project Description

Napa County proposes to adopt an updated General Plan Housing Element pursuant to State law, together with conforming amendments to other elements of the Napa County General Plan, zoning amendments and other implementing ordinances. In compliance with Assembly Bill (AB) 162, Napa County also proposes to amend the Conservation and Safety Elements to address flood-related matters. This Draft EIR evaluates potential environmental impacts (direct, indirect and cumulative) of these actions consistent with requirements of the California Environmental Quality Act (CEQA), the State CEQA Guidelines and Napa County’s local procedures for implementing CEQA.

The proposed Housing Element Update is an update of the existing Housing Element, which is the only element of the County’s General Plan that was not included in the comprehensive General Plan Update adopted by the Napa County Board of Supervisors on June 3, 2008. The existing Housing Element was last updated on October 26, 2004.

The proposed Housing Element Update policies and programs are intended to guide the County’s housing efforts through June 30, 2014. Nonetheless, potential cumulative impacts of the Housing Element Update, associated implementing actions, and other closely related past, present and reasonably foreseeable future projects, are analyzed in this Draft EIR for the year 2030.

Direct and indirect impacts of the Housing Element were assessed by estimating the number and location of new dwelling units that could be constructed between 2007 and 2014 due to the sites and programs specified. Cumulative impacts were assessed by projecting growth likely to occur in the county and the region by 2030.

As shown in Table 3-1, development that could occur under the proposed project could result in the construction of 1,398 housing units by 2014 if all identified housing sites were built upon. Of these units, 1,245 units could be developed on designated housing sites located throughout the county, and 153
## Table 3-1  Anticipated Housing Units Resulting from Implementation of the Proposed Housing Element Update (2007-2014)

<table>
<thead>
<tr>
<th>Housing Sites</th>
<th>Above Moderate Income</th>
<th>Moderate Income</th>
<th>Low Income</th>
<th>Very Low Income</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Angwin</td>
<td>76</td>
<td>31</td>
<td>53</td>
<td>31</td>
<td>191</td>
</tr>
<tr>
<td>Moskowite Corner</td>
<td>53</td>
<td>26</td>
<td>13</td>
<td>13</td>
<td>105</td>
</tr>
<tr>
<td>Spanish Flat</td>
<td>50</td>
<td>25</td>
<td>12</td>
<td>12</td>
<td>99</td>
</tr>
<tr>
<td>Napa Pipe</td>
<td>591</td>
<td>101</td>
<td>158</td>
<td></td>
<td>850</td>
</tr>
<tr>
<td><strong>Subtotal</strong></td>
<td><strong>179</strong></td>
<td><strong>673</strong></td>
<td><strong>179</strong></td>
<td><strong>214</strong></td>
<td><strong>1,245</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Housing Programs</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Second Unit Production</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>50</td>
</tr>
<tr>
<td>Second Unit Production on Agricultural Preserve Parcels</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>20</td>
</tr>
<tr>
<td>Farmworker Housing Production</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>10</td>
</tr>
<tr>
<td>Density Bonus on Planned Development Mobile Home Parks</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>20</td>
</tr>
<tr>
<td>Accessory Units on Commercial Limited/Commercial Neighborhood Parcels</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>40</td>
</tr>
<tr>
<td>Redesignations in Monticello Road Rural Residential Area</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>13</td>
</tr>
<tr>
<td><strong>Subtotal</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>153</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1,398</td>
</tr>
</tbody>
</table>

*See Figure 3-2 for a map of the housing sites.

*See Figure 3-7 for a map of the Monticello Road Rural Residential area.

Source: Napa County, 2008
units could be developed through the implementation of six housing programs with quantifiable results.

Assuming the new units constructed under the Housing Element would have the same average household size as existing households in the unincorporated area of Napa County, 2.54 residents per household, the total population yield for the project would be approximately 3,551 new residents by 2014, an increase of about 1.8 percent annually.\(^1\) See Chapter 4.3 for a discussion of the County’s population and growth management system.

The population of unincorporated Napa County in 2008 is 28,816 people, and there are 11,984 housing units.\(^2\) Through its Housing Needs Assessment process, the County has estimated that in 2015, there will be 31,397 people and 12,687 households in unincorporated Napa County,\(^3\) representing an increase of 2,581 people and 703 households. These projections are based on a more likely scenario of growth and development in Napa County; however, this EIR evaluates a larger number of units in order to analyze the most extensive possible development and thereby create the most conservative assessment of the project’s possible environmental effects.\(^4\)


\(^4\) This EIR relies on population and housing unit information from the State of California Department of Finance (DOF). The County’s *Housing Needs Assessment* (dated October 31, 2008) uses data from the US Census and a private data vendor, Claritas, because these sources provide data on household income and other figures not available from DOF. Therefore, the Housing Needs Assessment contains slightly different numbers for 2008 unincorporated county population, households and household size data than does this EIR. The 2008 figures used in the 2008 *Housing Needs Assessment* include: population of 29,668 people (EIR uses 28,816 population); 10,533
A. Napa County Location and Characteristics

Figure 3-1 shows Napa County’s regional location. Napa County is located in the San Francisco Bay Area, and is bordered by Sonoma County to the west, San Pablo Bay to the south, Solano and Yolo Counties to the east and Lake County to the north. The county covers approximately 513,000 acres of land and water, which consist mostly of mountain ridges and narrow valleys running on a north-south axis. Scarcely one-third of the land in the county is level enough for conventional development, and only a small percentage of the level land is located along circulation routes connecting major population centers. Most development is located in the Napa Valley, which lies in the eastern part of the county along the Napa River. Due to its topography, excellent agricultural features and strong pro-agricultural policies, Napa County retains much of its rural character and agricultural productivity. Both State and County policies have long supported continued farming and agricultural industries in most of Napa County.

Five incorporated municipalities are located in Napa County: the Cities of Napa, Calistoga, American Canyon, and St. Helena, and the Town of Yountville. Most of the land area in Napa County remains unincorporated. Highway 12 is the primary east-west transportation corridor, while Highway 29 provides north-south access through the county.

The current population of unincorporated Napa County is approximately 29,000 people. There are approximately 12,000 households in unincorporated households (EIR uses 10,235 households); and household size of 2.57 persons per household (EIR uses 2.54 persons per household). The larger household size used in the Housing Needs Assessment would result in a slightly higher population under the proposed project: 42 people spread throughout the county. The slight difference between the data used in the Housing Needs Assessment do not affect the findings of this EIR analysis.
Napa County, with an average household size of 2.54 people. There are approximately 23,000 jobs in unincorporated Napa County.

B. Proposed Project Components Evaluated in this Draft EIR

As required by State Law, the proposed Housing Element Update has been prepared to ensure that unincorporated Napa County fairly accommodates its share of California’s projected housing needs. Napa County has analyzed local housing needs and resources, identified specific sites for potential development, and developed policies and implementation programs that are intended to meet the needs of all income segments of the community and of future residents. The proposed project under review includes these sites, policies and implementation programs, as well as concurrent zoning and other ordinance changes proposed to accommodate and facilitate the construction of affordable housing. The proposed project also includes conforming updates to other elements of the Napa County General Plan necessary to maintain internal consistency and flood-related updates to the Conservation and Safety Elements, as required by AB 162, as well as zoning and other ordinance changes required for Housing Element implementation.

Copies of the Draft Housing Element, conforming amendments to other Napa County General Plan elements and AB 162 changes proposed to the Napa County General Plan are available for public review at the Napa County Department of Conservation, Development and Planning, or online at www.co.napa.ca.us.

This discussion of the project components is separated into sections to describe separately the proposed housing sites, housing programs with quantifi-

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6 County of Napa, October 31, 2008, Housing Element Update Housing Needs Assessment.
able buildout figures, additional policy changes, and updates required by AB 162. Conforming amendments to other elements of the Napa County General Plan and Zoning Ordinance changes necessary to implement the Housing Element are noted where relevant.

1. Housing Sites
The proposed Housing Element Update designates four areas as potential locations for the construction of new affordable housing units: Angwin, Moskowite Corner, Spanish Flat and Napa Pipe.

Napa County’s land use policy encourages development to occur in designated urban areas. The Agricultural Preserve was developed in 1968 to enforce this concept. More recently in 1990, voters passed Measure J to further protect agricultural land in the county, and in November 2008, the voters extended these protections through Measure P. Measures J and P require voter approval for any General Plan Amendment that would re-designate land that is designated Agricultural Watershed and Open Space (AWOS) or Agricultural Resource (AR) unless certain narrow exceptions apply. Due to the uncertainty associated with gaining voter approval, Napa County has determined that sites that are subject to Measures J and P should not be considered as potential sites for affordable housing developments in the county when there are viable alternatives.

At the outset of this Housing Element update, the County decided to examine all of the sites in the Angwin, Monticello/Atlas Peak, Spanish Flat and Moskowite Corner areas that were identified in the 2004 Housing Element. In addition, the Napa Pipe site was considered because Napa Redevelopment Partners has purchased the site and has plans to remediate the property to provide a safe environment for housing. The Napa Pipe development project is in the early stages of review by the County. Following completion of draft technical studies related to water, traffic and fiscal impacts in collaboration with the City of Napa, the County issued a Notice of Preparation for an Environmental Impact Report (EIR) on January 2, 2009.
Because the Napa Pipe site provides additional capacity for housing, the County re-evaluated the four housing site areas from the 2004 Housing Element. Given these options, the County decided to focus on the sites that are deemed to be most desirable to the community and therefore most feasible to develop. One of the housing sites from the 2004 Housing Element, Monticello/Atlas Peak, is proposed to be removed from the affordable housing sites inventory, with Napa Pipe proposed instead.

The four areas to be designated for affordable housing are shown in Table 3-2 and Figures 3-2 through 3-6 on the following pages, and described below.

a. Angwin
Two parcels were designated in the 2004 Housing Element as potential sites for a total of 191 units of affordable housing in the urbanized Angwin community. These parcels are proposed for retention in the Draft Housing Element Update as shown in Figure 3-3.

♦ Site A: Site A (APN 024-410-007) is a flat, 17-acre parcel located at 10 Brookside Road in Angwin. The site is designated in the General Plan as Urban Residential and is zoned for Planned Development with the Affordable Housing Combination District (:AHCD) overlay. Five acres of the site are already developed with the Brookside Park Apartments student housing, owned and operated by Pacific Union College (PUC). The Angwin Volunteer Fire Station occupies an additional acre. A potential wetland occupies the southern portion of the property, and there is active agriculture on the portion of the parcel between the fire station and the existing housing. Adjacent uses include a gas station, a shopping center and PUC. A bicycle path runs along the eastern boundary of the parcel parallel to College Road. Site A is estimated to have 11 developable acres, which could be developed with 114 dwelling units (a density of 10 units to the acre) without any further discretionary approvals from the County. The :AHCD zoning requires that Angwin Site A units meet the following affordability levels: 10 percent Very Low, 30 percent Low and 25 to 30 percent Moderate. No zoning changes are necessary or proposed
FIGURE 3-2

HOUSING SITE LOCATIONS

Source: County of Napa, 2008; Design, Community & Environment, 2008

NAPA COUNTY HOUSING ELEMENT UPDATE
DRAFT EIR
Figure 3-3

ANGWIN SITES

Source: County of Napa, 2008; Design, Community & Environment, 2008
<table>
<thead>
<tr>
<th>Site</th>
<th>APN/Location</th>
<th>Zoning</th>
<th>General Plan</th>
<th>Allowable Density (du/ac)</th>
<th>Acreage</th>
<th>Realistic Unit Capacity</th>
<th>Existing Use</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Angwin – Site A</td>
<td>024-410-007</td>
<td>:AHCD</td>
<td>Urban Residential</td>
<td>10</td>
<td>11.4</td>
<td>114</td>
<td>Undeveloped</td>
<td>Private water and sewer available; wetlands</td>
</tr>
<tr>
<td>Angwin – Site B</td>
<td>024-080-024</td>
<td>:AHCD</td>
<td>Urban Residential</td>
<td>11</td>
<td>7</td>
<td>77</td>
<td>Undeveloped</td>
<td>Private water and sewer available</td>
</tr>
<tr>
<td>Moskowite Corner – Site A</td>
<td>032-150-062</td>
<td>:AHCD</td>
<td>Rural Residential</td>
<td>3</td>
<td>1</td>
<td>3</td>
<td>Undeveloped</td>
<td>CVWD additional water supplies and wastewater infrastructure required; wetlands located on a majority of the site</td>
</tr>
<tr>
<td>Moskowite Corner – Site B</td>
<td>032-150-063</td>
<td>:AHCD</td>
<td>Rural Residential</td>
<td>3</td>
<td>2</td>
<td>6</td>
<td>Undeveloped</td>
<td>CVWD additional water supplies and wastewater infrastructure required; wetlands located on a majority of the site</td>
</tr>
<tr>
<td>Moskowite Corner – Site C</td>
<td>032-150-048</td>
<td>:AHCD</td>
<td>Rural Residential</td>
<td>3</td>
<td>20.8</td>
<td>62</td>
<td>Undeveloped</td>
<td>CVWD additional water supplies and wastewater infrastructure required; prehistoric archeological site; potential historically significant structure</td>
</tr>
<tr>
<td>Moskowite Corner – Site D</td>
<td>032-150-047</td>
<td>:AHCD</td>
<td>Rural Residential</td>
<td>3</td>
<td>11.4</td>
<td>34</td>
<td>Undeveloped</td>
<td>CVWD additional water supplies and wastewater infrastructure required; prehistoric archeological site</td>
</tr>
<tr>
<td>Spanish Flat – Site A</td>
<td>019-261-038</td>
<td>:AHCD</td>
<td>Rural Residential</td>
<td>5</td>
<td>1.5</td>
<td>7</td>
<td>Undeveloped</td>
<td>SFWD additional water and wastewater infrastructure required</td>
</tr>
<tr>
<td>Spanish Flat – Site B</td>
<td>019-261-035</td>
<td>:AHCD</td>
<td>Rural Residential</td>
<td>5</td>
<td>5</td>
<td>25</td>
<td>Undeveloped</td>
<td>SFWD additional water and wastewater infrastructure required</td>
</tr>
<tr>
<td>Spanish Flat – Site C</td>
<td>019-261-026</td>
<td>:AHCD</td>
<td>Rural Residential</td>
<td>5</td>
<td>1.7</td>
<td>8</td>
<td>Undeveloped</td>
<td>SFWD additional water and wastewater infrastructure required</td>
</tr>
</tbody>
</table>
### Table 3-2  Housing Sites Summary Table with Realistic Unit Capacity By 2014 (Continued)

<table>
<thead>
<tr>
<th>Site</th>
<th>APN/ Location</th>
<th>Zoning</th>
<th>General Plan</th>
<th>Allowable Density(^a) (du/ac)</th>
<th>Acreage</th>
<th>Realistic Unit Capacity</th>
<th>Existing Use</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spanish Flat – Site D</td>
<td>019-261-025</td>
<td>:AHCD</td>
<td>Rural Residential</td>
<td>5</td>
<td>0.9</td>
<td>4(^f)</td>
<td>Undeveloped</td>
<td>SFWD additional water and wastewater infrastructure required</td>
</tr>
<tr>
<td>Spanish Flat – Site E</td>
<td>019-262-001</td>
<td>:AHCD</td>
<td>Rural Residential</td>
<td>5</td>
<td>3(^b) (entire parcel = 27.3 ac)(^b)</td>
<td>15(^f)</td>
<td>RV and boat storage</td>
<td>SFWD additional water and wastewater infrastructure required</td>
</tr>
<tr>
<td>Spanish Flat – Site F</td>
<td>019-050-003</td>
<td>:AHCD</td>
<td>Rural Residential</td>
<td>5</td>
<td>8.1</td>
<td>40(^f)</td>
<td>RV and boat storage</td>
<td>SFWD additional water and wastewater infrastructure required</td>
</tr>
<tr>
<td>Napa Pipe – Site A and Site B</td>
<td>046-412-005 and 046-400-030</td>
<td>Napa Pipe Residential</td>
<td>Transitional</td>
<td>20 to 30</td>
<td>Approx. 50</td>
<td>Approx. 850</td>
<td>Union Pacific Railroad right-of-way and industrial</td>
<td>Existing City and NSD services designed for industrial use would have to be modified or supplemental</td>
</tr>
</tbody>
</table>

\(^a\) Defined as density allowed by right.  
\(^b\) The total parcel size is larger than the area proposed for development.  
\(^c\) :AHCD requires that Angwin Site A units include the following affordability levels: 10% Very Low, 30% Low and 25 to 30% Moderate.  
\(^d\) :AHCD requires that Angwin Site B units include the following affordability levels: 50% Very Low and Low.  
\(^e\) :AHCD requires that Moskowite Corner units include the following affordability levels: 25% Very Low and Low, and 25% Moderate.  
\(^f\) :AHCD requires that Spanish Flat units include the following affordability levels: 25% Very Low and Low, and 25% Moderate.  
\(^g\) Re-zoning required within one year of Housing Element adoption.  

Sources: Napa County GIS, Napa County General Plan and Zoning Ordinance, Napa County Existing Housing Element and Environmental Assessment, local infrastructure and service providers.
for this housing site, and development could proceed “by right” if proposed at the required level of affordability.

♦ Site B (APN 024-080-024) is located south of the PUC campus on Las Posadas Road, immediately east of the intersection with Cold Springs Road. The site, which comprises 7 acres of a 45-acre parcel, is currently undeveloped, gently-sloping grassland. Adjacent uses include a vineyard, large single-family homes, a day care center and a school. Site B is designated as Urban Residential and is zoned for Planned Development with the :AHCD overlay, and could be developed with 77 dwelling units (a density of 10 units to the acre) without any further discretionary approvals from the County. The :AHCD zoning requires that Angwin Site B units include the following affordability levels: 50 percent Very Low and Low. No zoning changes are necessary or proposed for this housing site, and development could proceed “by right” if proposed at the required level of affordability.

Napa County is currently evaluating a development application from PUC and Triad Corporation for a master plan/use permit approval that would allow the development of approximately 390 residential units on lands owned by PUC, including Sites A and B in the Angwin area. That project is referred to as the Angwin Ecovillage project. The application does not envision building out Sites A and B with the number of affordable units that would permit the development to occur “as of right” without further discretionary County approvals. Although this is a pending application, this EIR does not consider this project in its cumulative analysis because the project includes an alternative development scenario for this site. If the Housing Element Update project is fully built out, the Angwin Ecovillage project would not proceed as originally proposed or as recently modified to include a senior retirement component.

b. Moskowite Corner
Four sites located at the intersection of Highways 128 and 121, as illustrated in Figure 3-4, have been identified as potential locations for affordable housing projects. The area is rural in character, with adjacent uses including
Figure 3-4

MOSKOWITE CORNER SITES

NAPA COUNTY HOUSING ELEMENT UPDATE
DRAFT EIR

Source: County of Napa, 2008; Design, Community & Environment, 2008
vineyards, a boat and RV storage facility, a mobile home park, and a small grocery. While Moskowite Corner is some distance from traditional employment centers like downtown Napa, it is located at the cross roads of two State highway routes, and lies in proximity to Lake Berryessa, which is under the jurisdiction of the federal Bureau of Reclamation. The County expects to be able to accommodate a maximum of 105 multi-family or subsidized single-family manufactured homes on one or more of the four parcels described below. The :AHCD zoning requires that housing on any of the Moskowite Corner sites include the following affordability levels: 25 percent Very Low and Low, and 25 percent Moderate. No zoning changes are necessary or proposed for these housing sites, and development could proceed “by right” if proposed at the required level of affordability.

♦ Sites A and B. Two adjacent parcels (APNs 032-150-062 and 031-150-063) cover approximately 20 acres. Approximately 3 acres are possibly suitable for development. These parcels are located in lowlands, and a stream runs through them. The sites are currently vacant but have been in agricultural use in the past. The sites are designated as Rural Residential and zoned as Agricultural Watershed with the :AHCD overlay. Sites A and B could be developed with nine dwelling units (three units to the acre) without further discretionary approvals from the County.

♦ Sites C and D. Two adjacent parcels (APNs 032-150-048 and 032-150-047) cover approximately 32.2 acres. These parcels are hilly, and a pond and stream are located on the northwestern parcel. A single family home is located on each of these parcels, as well as several accessory buildings. The sites are primarily grassland, with scattered oak trees. Both sites are designated as Rural Residential and zoned as Agricultural Watershed with the :AHCD overlay.

c. Spanish Flat
Several sites in the Spanish Flat area have been identified as suitable for development of affordable housing units. These sites are shown in Figure 3-5. This area is primarily rural, with small residential enclaves. Adjacent uses include a senior center, a maintenance yard used by the Spanish Flat Water
District, a cemetery, and a few small commercial establishments including boat and RV storage and a small market. As shown in Figure 3-5, the Spanish Flat area lies in proximity to Lake Berryessa, which is under the jurisdiction of the federal Bureau of Reclamation (BOR). The County expects to be able to accommodate a maximum of 107 residential units as townhouses, apartments, or subsidized single-family manufactured homes, on the six sites in the Spanish Flat area, described below. The AHCD zoning requires that housing on any of the Spanish Flat sites include the following affordability levels: 25 percent Very Low and Low, and 25 percent Moderate. No zoning changes are necessary or proposed for these housing sites, and development could proceed “by right” if proposed at the required level of affordability.

♦ Sites A and B. On Spanish Flat Loop road, two adjacent parcels (APNs 019-261-028 and 019-261-035) total approximately 12 acres. A Napa County maintenance yard is located on the eastern side of Site B. Apart from the maintenance facility, these sites are vacant, slightly-sloped grassland, while Site B also contains oak woodlands. Both sites are designated as Rural Residential. Site A is zoned as Commercial Limited and Site B is zoned as Agricultural Watershed. Both sites are also zoned with the AHCD overlay.

♦ Sites C and D consist of two parcels covering approximately 2.6 acres (APNs 019-261-026 and 019-261-025). Both sites are designated as Rural Residential. Site C is currently being used as commercial boat and RV storage, and is zoned as Marine Commercial, with the AHCD overlay. Site C also contains a 3-foot wide drainage channel within the Berryessa Knoxville Road right-of-way. Site D is steeply sloped, and contains a drainage with riparian vegetation, as well as grassland and scattered oaks. Site D is zoned as Commercial Limited with the AHCD overlay.

♦ Site E consists of approximately 3 acres of slightly sloping grassland and woodland, on APN 019-262-001. A drainage runs along the parcel parallel to the road, and there are many large oak trees. Site E also includes the leachfield of the septic system of a residence on another part of the parcel that includes Site E. Several recreational vehicles and busses are
Figure 3-5

SPANISH FLAT SITES

Source: County of Napa, 2008; Design, Community & Environment, 2008
currently being stored on the site. The site is designated as Rural Residential and zoned as Agricultural Watershed with the :AHCD overlay.

♦ Site F is an 8.1 acre parcel (APN 019-050-003), a portion of which has been developed and is being used as a commercial boat and RV storage facility. The edge of the property supports a cover of oak woodland and grassland, and an intermittent stream bisects the property. The site is designated as Rural Residential and zoned as Marine Commercial with the :AHCD overlay.

d. Napa Pipe
Two parcels in the Napa Pipe site have been identified as suitable for development of housing units. These sites are shown in Figure 3-6.

The entire Napa Pipe site is approximately 152 acres, located about 3 miles south of downtown Napa in unincorporated Napa County. The site is currently in low-intensity industrial use, and lies adjacent to the Napa River.

The Napa County Airport Land Use Compatibility Plan includes about 50 acres of the sites within Zone D, where residential uses are considered incompatible. No residential development is proposed within Zone D. The northern 100 acres of the sites are located within Zone E, where residential uses are allowed. This portion of the sites has been proposed for high density residential development by a developer who would require multiple approvals from the County and other agencies. The developer’s proposal would take over 20 years to build out. Therefore, only about 50 acres, accommodating approximately 850 units at densities of 20 units to the acre or more, are assumed to develop in the current housing cycle (by July 2014). The cumulative analysis provided for future year 2030 assumes up to 2,580 dwelling units and a mix of other uses.

♦ Sites A and B. Two parcels comprise Napa Pipe Sites A and B (APNs 046-412-005 and 046-400-030). The Napa Pipe site is bordered by the Napa River on the western side of the site. Both Napa Pipe sites are underutilized with existing industrial uses. A Union Pacific Railroad
Figure 3-6

NAPA PIPE PHASE I SITES

Source: County of Napa, 2008; Design, Community & Environment, 2008
(UPRR) right-of-way bisects the site, and would remain in UPRR’s ownership with access easements for at-grade crossings. Both sites have a General Plan designation of Study Area and are zoned Industrial – Airport Compatibility. Concurrent with the proposed Housing Element Update, the General Plan designation for these parcels would be amended to Transitional and conforming amendments to the Agricultural Preservation and Land Use Element would be adopted. The portion of the sites outside of Airport Land Use Compatibility Plan Zone D would subsequently be rezoned as Napa Pipe Residential. A project-specific EIR is being prepared and will be relied upon for zoning changes and project entitlements.

2. Housing Programs
The proposed Housing Element Update includes goals, objectives, policies and programs to assist the County in assessing housing needs, providing housing directly, and facilitating the construction of needed units. The six housing programs described below are discussed separately from other proposed programs and policies because the County is able to develop realistic estimates of the numbers of units that would be created as a result of each program without resorting to speculation. The County proposes to accommodate up to 153 units through these programs.

a. Second Unit Production
As required by State law, Napa County permits construction of secondary residential units of 1,200 square feet or less on parcels that already include a main residence in some zoning districts. Because these units can be constructed on existing parcels without requiring the owner to purchase additional land, they are assumed to be rental housing affordable to moderate-income households. Historically, the County has permitted approximately 10 secondary dwelling units per year, and there is every indication that this trend will continue, with 50 new second units between 2009 and 2014.
b. Second Units on Parcels Zoned Agricultural Preserve
To implement the Draft Housing Element Update, the County would amend the Zoning Code to allow secondary dwelling units on parcels zoned Agricultural Preserve (AP), subject to restrictions on their use by moderate- or lower-income households (unless used by family members). Currently, only one single-family house per parcel is allowed on each parcel with this zoning designation (in addition, a guest cottage without a kitchen is also allowed). There are approximately 1,900 parcels zoned AP in the county, although some already include two dwelling units and would be precluded from adding a second unit. Also, not every property owner allowed to build a second unit would want to do so immediately, not every property owner could afford to do so, and some parcels in Williamson Act contracts would be precluded from adding second units. Historically, the County has permitted approximately 10 secondary dwelling units per year in other zoning districts, including the Agricultural Watershed (AW), Residential Country (RC) and Residential Single District (RS). The ratio of parcels zoned AP to parcels zoned AW, RC and RS is approximately 0.16 (i.e. there are 1,890 parcels zoned AP and 11,540 parcels zoned AW, RC or RS). This ratio was applied to the number of secondary dwelling units historically permitted per year to estimate that approximately 2 secondary dwelling units per year would be constructed on parcels zoned AP through this program (i.e. 0.16 times 10 second units equals two second units). However, this low number would not account for pent-up demand due to the prohibition on second units on parcels zoned AP. Thus, to be conservative, the County anticipates that this program would result in approximately 20 new units during the five-year period covered by the proposed Housing Element.

c. Farmworker Housing Production
State housing law (Health and Safety Code §17021.6) requires that farmworker housing for up to twelve employees and their families be allowed by right on parcels zoned for agricultural use. To maintain consistency with State law, the Housing Element will continue the County’s current policies by allowing some farmworker housing by right and will include policies supporting creation of additional farmworker housing. Historically, the con-
struction of farmworker housing has been incremental. Based on permit history, the County expects to accommodate as much as 10 units of housing through farmworker housing production.

d. Density Bonus for Mobile Home Parks with Planned Development Zoning
To implement the Draft Housing Element Update, the County would amend the Zoning Code to allow 25 percent more units for projects involving the redevelopment of existing mobile home parks that are zoned Planned Development (PD), provided that 50 percent of the units are maintained as affordable, any displaced residents are provided with relocation assistance, and developers adhere to green building standards, such as LEED or Greenpoint systems. The density bonus would require compliance with the requirements for conversion or closure of mobile home parks contained in California Government Code Section 65863.7 or any amendments thereto. This program would affect two existing mobile home parks in the county, one of which currently contains 20 units and the other of which contains 60 units. By allowing an increase of up to 25 percent over the current number of existing legal units, this program would accommodate a total of 20 new units.

e. Accessory Units on Parcels Zoned Commercial Limited or Commercial Neighborhood
To implement the Draft Housing Element Update, the County would amend the Zoning Code to allow a limited number of accessory dwelling units in combination with permitted commercial uses on sites in the county zoned Commercial Limited (CL) or Commercial Neighborhood (CN). These units would be allowed in addition to any commercial use already constructed and operating on the site. Assuming that approximately two to three units are built on each commercially-zoned site, this program would accommodate a maximum of 160 new units dispersed throughout the county. (See Figure AG/LU-2 in the Napa County General Plan for the location of commercially zoned properties.) The County anticipates that no more than 40 of these units (25 percent) would be built within the five-year life of this Housing Element because many of the commercially-zoned sites are already developed,
and new, accessory units are most likely to be added when commercial sites are developed or re-developed.

f. Redesignations in the Monticello Road Rural Residential Area

Concurrent with adoption of the Draft Housing Element Update, the County would amend the General Plan Land Use Map to redesignate 60 parcels near the City of Napa from Rural Residential to Urban Residential. These parcels are shown in Figure 3-7. These parcels are located immediately adjacent to the City of Napa and are currently zoned Residential Single: Building Site Combination District with a minimum lot size of 2 acres (RS:B-2). Redesignation to Urban Residential would allow landowners to apply to rezone their property and construct additional housing. In order to qualify for the re-zoning, the applicant would be required to demonstrate that municipal water and sewer service would be available to serve the new housing units. This program would complement the policy in the recently-adopted General Plan to alleviate water quality problems caused by aging septic systems in this area by allowing for the extension of Napa Sanitation District sewer service along Monticello Road.7

Given current development patterns and parcel sizes, only one parcel in the Monticello Road Rural Residential Area (APN 049-161-009) could develop at a higher density than one house per parcel under this program. The owner of this parcel has proposed development of 13 units on approximately 4.3 acres.

3. Additional Policy Changes

The proposed Housing Element Update contains a number of policy and program changes in addition to those described above. These polices are expected to facilitate construction of affordable housing units, but it is not possible to quantify specific numbers of units that these policies may generate. However, they are analyzed in this Draft EIR since they may have direct and measurable physical impacts.

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7 Policy AG/LU-92 of the 2008 Napa County General Plan.
The image contains a map with a legend indicating different land use designations. The legend includes:

- RR sites to be redesignated to UR
- General Plan Land Use Designation
- Cities
- Agricultural Resource

The map highlights specific sites to be redesignated from Rural Residential (RR) to Urban Residential (UR), with coordinates for some sites provided. The map is labeled "Monticello Road Rural Residential Area - Sites Proposed for Redesignation."
This category also includes policies that would result in changes to the County’s existing permitting processes and funding mechanisms, but would not directly result in construction of housing units, and therefore would have no direct environmental impacts themselves. For example, this section includes the policy regarding local coordination, in which the County would work with the cities and towns, public housing authorities, and private non-profit agencies in Napa County to coordinate job-generating and residential goals, policies, and objectives with housing plans. This section also includes policies that would require subsequent review, analysis and location work for an accurate assessment of potential environmental impacts, as well as policies that would result in changes to the County’s existing permitting processes and funding mechanisms, but would not directly result in construction of housing units.

a. Monticello/Atlas Peak Rezone
To implement the Draft Housing Element Update, the three sites in the Monticello/Atlas Peak area that were identified in the 2004 Housing Element (APNs 039-320-016, 039-320-006 and 049-110-005) would be rezoned to eliminate the AHCD overlay zoning. These sites would maintain their underlying zoning of Residential Country and Planned Development.

b. Workforce Housing Ordinance
The County would develop modifications to the existing Affordable Housing Ordinance that would establish a preference for local employees to reside in affordable housing units produced through the program. The County would also develop a program to establish a preference for local employees to purchase or rent market rate housing in the unincorporated area. This program would not create additional housing units, but it would potentially result in changes in the occupancy patterns of units that otherwise would have been produced.

c. Homeless Shelters in the Industrial Zone
To implement the Draft Housing Element Update and as required by California Government Code Section 65583(a)(4), the County would amend the
Zoning Ordinance to allow homeless shelters as of right in the Industrial (I) zoning district in order to ensure an adequate supply of land is available and minimize governmental constraints in the provision of emergency housing near urban centers, public transportation, and related needed services. Existing (I) areas are located in southern Napa County, generally along Highway 29 north of American Canyon and south of Imola Avenue. The (I) district is intended to encourage “a variety of industrial uses such as administrative facilities, research institutions, and specialized manufacturing organizations” in appropriate locations. This program would not necessarily result in the provision of shelters that would not otherwise have been permitted, but it would facilitate efforts to provide such facilities in order to address unmet needs for emergency shelter. Alternatively, the County could explore the possibility of entering into a multi-jurisdictional agreement that will accommodate the County’s unmet need.

d. Energy Conservation
When the County adopts updates to the local building code to conform with changes in State Codes, these updates would include measures to conserve energy and water.

e. Affordable Housing Ordinance Amendment
The County would amend its Affordable Housing Ordinance to increase the inclusionary percentage from 10 percent to 20 percent of total units.

f. Farmworker Housing Provisions
The County would require a preference for farmworkers in affordable housing projects with which the County assists.

g. Development Patterns
The County would encourage mixed-use development and appropriate housing densities in suitable locations within designated urban areas to facilitate access by foot, bicycle, and/or mass transit to and from commercial services and job locations, educational facilities and to minimize energy and water usage.
h. County Owned Property
The County would continue to explore the possibility of developing affordable housing on vacant or underutilized property that is currently owned by the County.

i. Public/Private Partnerships
The County would pursue public/private partnerships with private landowners who determine they can no longer maintain farmworker camps to ensure that there is no loss of farmworker housing.

j. Local Coordination
The County would work with the cities and towns, public housing authorities, and private non-profit agencies in Napa County to coordinate job-generating and residential goals, policies, and objectives with housing plans. This coordination can minimize impacts of future job growth and housing development on these jurisdictions by ensuring that adequate local housing development can occur in concert with job creation and maintain an appropriate land use balance within the county.

k. Migrant Farmworker Housing Inspections
The County would continue monitoring and annual inspections to ensure that migrant farmworker housing meets applicable health and safety standards.

l. Universal Design
The County would continue to promote the concepts of “universal design” allowing accessibility by all disabled and physically challenged residents and visitors to all future residential units.

m. Housing Rehabilitation Assistance
The County would continue to seek State and federal funding and utilize Housing Trust Funds to assist qualified homeowners and owners of rental properties with rehabilitation of identified substandard units.
n. Public Notifications About Assistance Programs
The County would notify the public of available special assistance programs by use of brochures and news releases.

o. Discrimination Advocacy
The County would continue to review reports of discrimination in housing made by individuals and agencies receiving complaints, and, if warranted by the severity of the problem, initiate an educational campaign by the County, the media, the Board of Realtors and the Chamber of Commerce.

p. Update Commercial Housing Impact Fee
The County would update the Affordable Housing Ordinance to adjust the commercial housing impact fee every time the Housing Element is updated.

q. Affordability Deed Restrictions
The County would require projects receiving any type of County assistance, as well as those units built as part of the County’s inclusionary housing requirement, to apply deed restrictions that would require affordability of assisted units for a minimum of 40 years.

r. Simplifications to the Growth Management System
The County would simplify its Growth Management System by continuing the practice of accumulating unused Category 4 (affordable) permits indefinitely; continuing the practice of accumulating unused permits in other categories for three years; consolidating Categories 1 through 3 and simplifying periodic updates to the permit limit. Updates to the 1 percent annual permit limit will be calculated based on the population in unincorporated Napa County, although the new permit limit will never decrease from the previous permit limit.

4. AB 162 Conservation and Safety Element Updates
AB 162 requires that the Conservation and Safety Elements be updated to identify floodplains that could accommodate floodwater for groundwater recharge and stormwater management. The Conservation and Safety Ele-
ments would be updated to address these statutory requirements by identifying additional information about flood hazards and establishing additional goals, policies and objectives to protect the community from flooding risk.

Because the proposed changes to the Conservation and Safety Elements pertain only to flood and fire safety issues, the analysis of this component of the project is discussed only in several sections of this Draft EIR.

5. Other General Plan and Zoning Ordinance Amendments
In order to maintain internal consistency within the General Plan, and consistency between the General Plan and Zoning Ordinance, other General Plan elements would be amended at the same time that the Housing Element is adopted. Specifically:

♦ The Agricultural Preservation and Land Use Element would be revised to change the designation of the Napa Pipe site from Study Area to Transitional.

♦ Policy AG/LU-119 would be revised to simplify the Growth Management System.

♦ The Zoning Ordinance would be amended to allow homeless shelters by right in the Industrial zone.

C. Objectives of the Proposed Project

The proposed project is designed to meet a series of objectives, based on State requirements, local circumstances, and community concerns. These objectives include:

♦ Fulfill State law, which has established an overarching Statewide goal of “decent housing and a suitable living environment for every Californian...” while abiding by the County’s long-term commitment to agricultural preservation and directing new housing development to designated urban areas.
♦ Comply with the substantive requirements for a Housing Element as set forth in Section 65583 of the California Government Code, including:
  • identification and analysis of existing and projected housing needs of all economic segments of the community;
  • enumeration of goals, policies, quantified objectives, and scheduled programs for the preservation, improvement and development of housing;
  • identification of adequate sites for housing, including rental housing, factory-built housing and mobile homes, emergency shelters, transitional housing and supportive housing; and
  • removal and/or mitigation of unnecessary governmental and non-governmental constraints to the preservation, maintenance, and production of housing, including housing for the disabled.
♦ Identify particular populations with special housing needs, such as large families, seniors, female-headed households, people with disabilities, farmworkers, and those in need of emergency shelter.
♦ Accommodate the County’s fair share of regional housing needs for various housing types and costs, as determined by ABAG’s Regional Housing Needs Determination.
♦ Provide an adequate numerical buffer between the number of units proposed in the Housing Element Update and the County’s housing allocation, so as to ensure that the County’s housing allocation is met even if not all housing sites identified in the proposed Housing Element Update are ultimately available and developed as anticipated.
♦ Identify appropriate sites for new housing that could support urbanized residential development consistent with the new Housing Element.
♦ Distribute housing to multiple locations in the county (to share the opportunities and responsibility for affordable housing throughout the county.)
Ensure internal consistency among the General Plan elements and with other County regulations.

D. **Required Permits and Approvals**

In general, the Housing Element Update, conforming General Plan amendments and associated amendments to the County Code will be adopted solely by Napa County, without oversight or permitting by other agencies, following certification of a Final EIR. However, following County approval, the State Department of Housing and Community Development (HCD) will be asked to certify the County’s Housing Element.

Housing development on the sites identified in the Housing Element may also require approvals from Napa County and/or other agencies. Specifically, affordable housing development on sites in Moskowite Corner, Spanish Flat, and Angwin may proceed without additional discretionary approvals from the County provided they are consistent with policies and regulations associated with the AHCD overlay zoning designation. However, development on these sites would still require building permits, as well as approvals associated with water and wastewater services.

Housing development on the Napa Pipe site would require that the County approve a rezoning and grant entitlements following certification of a project-specific EIR. Approvals from other agencies will also be required for water and wastewater services, consolidation/adjustment to at grade rail crossings, and encroachment permits for connections to City roads.

Housing development pursuant to proposed housing programs would also require subsequent approvals by the County and, in some cases, other agencies.
This chapter consists of fourteen sections that evaluate the environmental impacts of the proposed Housing Element Update. In accordance with Appendix G of the CEQA Guidelines, potential environmental effects are analyzed for the following environmental issue areas:

- Agriculture
- Land Use
- Population, Housing and Employment
- Transportation
- Biological Resources
- Fisheries
- Noise
- Air Quality (including Climate Change)
- Human Health and Risk of Upset
- Geology, Soils and Mineral Resources
- Hydrology and Water Quality
- Cultural and Paleontological Resources
- Public Services and Utilities
- Visual Resources, Light and Glare

Each section follows the same format, consisting of the following subsections:

- The Regulatory and Policy Framework section describes existing regulations and policies pertaining to the environmental factor reviewed.
- The Existing Conditions section describes current conditions with regard to the environmental factor reviewed.
- The Standards of Significance section tells how an impact is judged to be significant in this Draft EIR. These standards are based on the CEQA Guidelines and local practice. Further explanation is provided where necessary.
- The Impact Discussion section gives an overview of potential impacts, and tells why impacts are found to be significant or less than significant.
- The Impacts and Mitigation Measures section numbers and lists identified impacts, and identifies measures that would mitigate each impact. Each
numbered impact is considered significant prior to mitigation. Mitigation measures have been suggested that will reduce significant impacts to less-than-significant levels. Impacts would be less-than-significant after mitigation unless they are identified as significant and unavoidable in the text.

As indicated in Chapter 1, project-specific mitigation measures for housing sites that were included in the rezoning program of the 2004 Housing Element, including Angwin, Moskowite Corner and Spanish Flat, are included in this Draft EIR where applicable and relevant. However, in some instances mitigation measures from the 2004 EA pertaining to these sites were not included in this Draft EIR due to a change in existing conditions or new regulations. In these cases, the impact was determined to be less than significant. Such instances are identified in footnotes throughout Chapter 4.

Also, as described in Chapter 1, this EIR tiers from the program-level EIR prepared for the 2008 Napa County General Plan Update. Many of the General Plan EIR mitigation measures were adopted and included as policies in the General Plan, so they apply to the Housing Element sites and programs, and represent part of the regulatory and policy framework presented.
This chapter describes the potential effects of the proposed Housing Element on agricultural resources. All relevant information related to the regulatory framework and existing conditions identified in Chapter 4.1 of the 2007 Napa County General Plan Draft EIR is incorporated by reference and briefly summarized. New and updated information pertaining to agricultural regulations and existing conditions is also included.

A. Regulatory and Policy Framework

Section 4.1.2 of the 2007 Napa County General Plan Draft EIR contains a detailed description of the regulatory framework related to agricultural resources in the project area, which includes State and local regulations and policies.

State regulations and programs related to agriculture include the Williamson Act, the Forest Practice Rules and the State’s Farmland and Mapping and Monitoring Program, which is described further below. The Williamson Act enables local governments to enter into contracts with landowners to restrict parcels to agricultural or open space uses. In exchange, the land is assessed under farming and open space uses rather that under full market value so that landowners may pay lower taxes. There are currently 69,500 acres of land under Williamson Act contracts in Napa County. The Forest Practice Rules were established in 1973 to ensure that timber harvesting is conducted in a manner that preserves and protects fish, wildlife, forests and streams.

Local regulations related to agriculture include the Napa County Zoning Ordinance, the Right to Farm Ordinance, the Farm Worker Housing and Labor Camps provisions of the County Code, Measure J (1990) and Measure P (2008). Title 18 of the Napa County Zoning Ordinance contains three agricultural zoning designations: Agricultural Watershed (AW), Agricultural Preserve (AP) and Agricultural Combination (A). The Right to Farm Ordinance is Section 2.94 of the Napa County Code, which states that the County will not consider the inconveniences or discomforts created by agricultural operations to be a nuisance so long as such operations are conducted legally,
in compliance with accepted standards and in a non-negligent manner. The Napa County Code also contains provisions for the development of permanent and seasonal housing for farm workers. Measure J, the Agricultural Lands Preservation Initiative, was enacted by Napa County voters in 1990 to preserve the county’s agricultural lands. Under Measure J, any change to agricultural land use map designations requires a vote of the people. Measure J was reaffirmed and extended through enactment of Measure P in November 2008.

1. Napa County General Plan
The Agricultural Preservation and Land Use Element of the Napa County General Plan designates over 90 percent of the county for agriculture, including lands designated Agricultural Resource (AR) and Agriculture, Watershed and Open Space (AWOS). The Element establishes protective standards (densities and intensities) for these areas and contains the following policies regarding agricultural resources.

Goal AG/LU-1: Preserve existing agricultural land uses and plan for agriculture and related activities as the primary land uses in Napa County

Goal AG/LU-5: With municipalities, other governmental units, and the private sector, plan for commercial, industrial, residential, recreational and public land uses in locations that are compatible with adjacent uses and agriculture.

Policy AG/LU-3: The County’s planning concepts and zoning standards shall be designed to minimize conflicts arising from encroachment of urban uses into agricultural areas. Land in proximity to existing urbanized areas currently in mixed agricultural and rural residential uses will be treated as buffer areas and further parcelization of these areas will be discouraged.

Policy AG/LU-4: The County will reserve agricultural lands for agricultural use including lands used for grazing and watershed/open space, except for
those lands which are shown on the Land Use Map as planned for urban development.

Policy AG/LU-9: The County shall evaluate discretionary development projects, re-zonings and public projects to determine their potential for impacts on farmlands mapped by the State Farmland Mapping and Monitoring Program, while recognizing that the state’s farmland terminology and definitions are not always the most relevant to Napa County, and shall avoid converting farmland where feasible.

Where conversion of farmlands mapped by the state cannot be avoided, the County shall require long-term preservation of one acre of existing farm land of equal or higher quality for each acre of state-designated farmland that would be converted to non-agricultural uses. This protection may consist of establishment of farmland easements or other similar mechanism, and the farmland to be preserved shall be located within the County and preserved prior to the proposed conversion. The County shall recommend this measure for implementation by the cities and town and LAFCO as part of annexations involving state-designated farmlands.

Policy AG/LU-11: Agricultural employee housing shall be permitted in agricultural zoning districts in conformance with state law. Seasonal farm labor housing may be provided in agricultural areas without regard to the location of farm employment in Napa County when the housing is under local public agency ownership or control.

Policy AG/LU-15: The County affirms and shall protect the right of agricultural operators in designated agricultural areas to commence and continue their agricultural practices (a “right to farm”), even though established urban uses in the general area may foster complaints against those agricultural practices. The “right to farm” shall encompass the processing of agricultural products and other activities inherent in the definition of agriculture provided in Policy AG/LU-2, above.
The existence of this “Right to Farm” policy shall be indicated on all parcel maps approved for location in or adjacent to designated agricultural areas and shall be a required disclosure to buyers of property in Napa County.

The Agricultural Preservation and Land Use Element of the Napa County General Plan also contains minimum parcel size restrictions that help to preserve the county’s agricultural character. Under Policy AG/LU-20, a minimum parcel size of 160 acres is required for lands designated as Agriculture, Watershed and Open Space. Under Policy AG/LU-21, a minimum parcel size of 40 acres is required for lands designated as Agricultural Resource. These parcel size requirements help to maintain areas of the county in which agriculture is the predominant use and uses incompatible with agriculture are precluded.

B. Existing Conditions

Napa County’s land characteristics allow for a variety of agricultural uses, including row crops, field crops, orchards, vineyards and grazing land. Napa County also has approximately 40,500 acres of potential timberland. The highest yielding use in Napa County’s agricultural economy is the production of wine grapes. Since 1984, irrigated farmland has increased in Napa County at a faster rate than land was urbanized.

Section 4.1.1 of the 2007 Napa County General Plan Draft EIR contains a detailed description of existing agricultural resources in Napa County. It describes conditions pertaining to agricultural production, the Soil Capability Classification System, the State’s Farmland Mapping and Monitoring Program, Napa County farmland conversion trends, and timber resources. This section contains updated information pertaining to the Farmland Mapping and Monitoring Program, recent farmland conversion trends and the 2007 Napa County Agricultural Crop Report.
1. Farmland Mapping and Monitoring Program

The Farmland Mapping and Monitoring Program (FMMP) data is updated and released every two years. In 2006, new data was released for Napa County. Table 4.1-1 tabulates the acres and percentage of land area by FMMP category, while Figure 4.1-1 illustrates farmlands by FMMP category. The predominant land classifications in 2006 were Grazing Land and Other Land. Together, these classifications accounted for 75.9 percent of total lands in Napa County. Farmlands of concern under CEQA (Prime Farmland, Farmland of Statewide Importance, and Unique Farmland) together comprised 11.5 percent of total lands in the county.

2. Napa County Farmland Conversion Trends

Table 4.1-7 in the 2007 Napa County General Plan Draft EIR summarizes changes in farmland classifications, as defined by FMMP, in all of Napa County from 1984 to 2004. Table 4.1-2 below summarizes changes in farmland classification for the entire county from 1984 to 2004 and 2006. The primary changes of farmland in Napa County from 1984 to 2004 were to re-categorize land into a higher classification. From 1984 to 2004, farmlands of concern under CEQA (Prime Farmland, Farmland of Statewide Importance, and Unique Farmland) increased in acreage from 42,458 acres (8.4 percent of total lands in Napa County) in 1984 to 60,051 acres (11.9 percent of total lands) in 2004. From 2004 to 2006, however, farmlands of concern under CEQA decreased slightly in acreage. As is identified in Table 4.1-2 below, farmlands of concern under CEQA decreased from 60,051 acres (11.9 percent of total lands) in 2004 to 58,036 acres (11.5 percent of total lands) in 2006, which indicates that earlier trends of converting lower classifications of farmland to higher classifications has not continued in more recent years.

From 1984 to 2004, urban lands increased in acreage from 17,450 acres (3.5 percent of total lands) in 1984 to 22,245 acres (4.4 percent of total lands) in 2004. Urban lands continued to increase slightly from 2004 to 2006, to 22,816 acres (4.5 percent of total lands) in 2006. Lands that have been converted to urban uses are dispersed throughout the county and have primarily been
those that were previously classified as either grazing land or “other” land types.

Agriculture in general and wine grapes in particular remain the dominant land use in Napa County. According to the 2007 Napa County Agricultural Crop Report, the gross value of the county’s agricultural crops was $484,844,700, up approximately 1.4 percent from 2006. In 2008, the Napa Valley Vintners estimated that the wine industry’s impact on Napa County’s economy alone is almost $11 billion annually, up 15 percent from 2005.

<table>
<thead>
<tr>
<th>Land Type</th>
<th>Acres</th>
<th>Percent of Land Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prime Farmland</td>
<td>31,999</td>
<td>6.3%</td>
</tr>
<tr>
<td>Farmland of Statewide Importance</td>
<td>9,679</td>
<td>1.9%</td>
</tr>
<tr>
<td>Unique Farmland</td>
<td>16,358</td>
<td>3.2%</td>
</tr>
<tr>
<td>Farmland of Local Importance</td>
<td>18,991</td>
<td>3.8%</td>
</tr>
<tr>
<td>Grazing Land</td>
<td>179,299</td>
<td>35.4%</td>
</tr>
<tr>
<td>Urban and Built-Up Land</td>
<td>22,816</td>
<td>4.5%</td>
</tr>
<tr>
<td>Other Land</td>
<td>204,320</td>
<td>40.4%</td>
</tr>
<tr>
<td>Water</td>
<td>22,396</td>
<td>4.4%</td>
</tr>
<tr>
<td><strong>Total Land Area Inventoried</strong></td>
<td><strong>505,858</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

## Table 4.1-2  Farmland Conversion Trends

<table>
<thead>
<tr>
<th>Land Type</th>
<th>1984</th>
<th>Percent of Land Area</th>
<th>2004</th>
<th>Percent of Land Area</th>
<th>2006</th>
<th>Percent of Land Area</th>
<th>Change Since 1984</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prime Farmland</td>
<td>25,870</td>
<td>5.1%</td>
<td>32,447</td>
<td>6.4%</td>
<td>31,999</td>
<td>6.3%</td>
<td>6,129</td>
</tr>
<tr>
<td>Farmland of Statewide Importance</td>
<td>4,806</td>
<td>1.0%</td>
<td>9,792</td>
<td>1.9%</td>
<td>9,679</td>
<td>1.9%</td>
<td>4,873</td>
</tr>
<tr>
<td>Unique Farmland</td>
<td>11,782</td>
<td>2.3%</td>
<td>17,812</td>
<td>3.5%</td>
<td>16,358</td>
<td>3.2%</td>
<td>4,576</td>
</tr>
<tr>
<td>Farmland of Local Importance</td>
<td>26,970</td>
<td>5.3%</td>
<td>19,279</td>
<td>3.8%</td>
<td>18,991</td>
<td>3.8%</td>
<td>(288)</td>
</tr>
<tr>
<td>Grazing Land</td>
<td>191,670</td>
<td>37.9%</td>
<td>179,906</td>
<td>35.6%</td>
<td>179,299</td>
<td>35.4%</td>
<td>(607)</td>
</tr>
<tr>
<td>Urban and Built-Up Land</td>
<td>17,450</td>
<td>3.5%</td>
<td>22,245</td>
<td>4.4%</td>
<td>22,816</td>
<td>4.5%</td>
<td>5,366</td>
</tr>
<tr>
<td>Other Land</td>
<td>204,767</td>
<td>40.5%</td>
<td>201,982</td>
<td>39.9%</td>
<td>204,320</td>
<td>40.4%</td>
<td>(447)</td>
</tr>
<tr>
<td>Water</td>
<td>22,545</td>
<td>4.5%</td>
<td>22,396</td>
<td>4.4%</td>
<td>22,396</td>
<td>4.4%</td>
<td>(149)</td>
</tr>
</tbody>
</table>

C. Standards of Significance

An agricultural resources impact is considered significant if implementation of the Housing Element Update would result in any of the following:

1. Conversion of Prime Farmland, Unique Farmland or Farmland of State-wide Importance (or “farmlands of concern under CEQA”), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency and defined by Public Resources Code Section 21061.1, to non-agricultural use;

2. Net decrease in the amount of designated agricultural land in the County, as represented by the Agricultural Resource and Agriculture, Watershed, and Open Space designations on the current Napa County General Plan Land Use Map;

3. Conflict with existing zoning for agricultural use, or a Williamson Act contract; or

4. Changes in the existing environment, which due to their location or nature, could result in conversion of Farmland to non-agricultural use or conflicts with agricultural use or agricultural operations (e.g. placement of urban and other uses adjacent to agricultural uses resulting in potential conflicts).

D. Impact Discussion

This section discusses the potential impacts to Napa County’s agricultural resources as a result of the policies, programs and implementation of the proposed Housing Element Update. For each standard of significance, impacts are discussed separately in relation to the Housing Element’s programs and potential housing sites.
1. Conversion of Farmlands of Concern under CEQA
   a. Programs and Policies

Housing constructed as a result of the proposed programs and policies would not result in the loss of Prime Farmland, Unique Farmland or Farmland of Statewide Importance to non-agricultural uses, as shown on the maps prepared by the Farmland Mapping and Monitoring Program of the California Resources Agency.

Pursuant to direction from the Napa County Board of Supervisors, the proposed Housing Element Update does not designate future housing development on farmlands of concern under CEQA. In addition, housing development under the proposed Housing Element Update would be subject to County standards, including Measures J (1990) and P (2008) and the Zoning Ordinance.

Therefore, proposed housing programs would have no impact related to conversion of farmlands of concern under CEQA.

b. Housing Sites

None of the proposed housing sites are on farmlands of concern under CEQA. Although Moskowite Corner Sites A, B, C and D contain 1.19 acres of Farmland of Local Importance, this is not a farmland of concern under CEQA. Housing development on the proposed housing sites would not result in the loss of Prime Farmland, Unique Farmland or Farmland of Statewide Importance to non-agricultural uses. Therefore, the proposed housing sites would have no impact related to conversion of farmlands of concern.

Collectively, sites and programs proposed as part of the Housing Element are expected to direct multi-family housing production away from agricultural areas, and towards designated urban areas.
2. Net Decrease in General Plan Designated Agricultural Land
   a. Programs and Policies
   Housing development under the proposed policies and programs would not decrease designated agricultural land in Napa County. Housing policies that allow for the construction of secondary dwelling units on agricultural land would be subject to requirements in the Zoning Ordinance that the unit be constructed within a close proximity of the housing site’s principal residence. In addition, new second units and farmworker housing units would be limited in size. Therefore, new housing would be sited and built so as to avoid significant loss of agricultural land. Impacts related to loss of designated agricultural land due to the proposed housing programs would be less than significant.

   b. Housing Sites
   Portions of Angwin Site B; Moskowite Corner Sites B, C and D and Spanish Flat Sites E and F extend into the General Plan land use designation boundary for Agriculture, Watershed and Open Space (AWOS). However, these portions of the housing sites are steep and/or not suitable for housing, and the Housing Element assumes that these small portions of the sites would remain undeveloped. The Housing Element does not propose to allow housing development on the AWOS portions of the sites. Although development is proposed to occur on lands that are partially designated as agricultural, the agricultural areas of the parcel would not be developed and would not be redesignated for non-agricultural purposes.

   The remaining portions of these housing sites with partial AWOS designations, as well as the rest of the Angwin, Moskowite Corner and Spanish Flat sites are designated as either Rural Residential or Urban Residential. The Napa Pipe site is urbanized and currently has a General Plan designation of Study Area. With adoption of the Housing Element, this site would be redesignated as Transitional.
Therefore, housing development on the proposed housing sites would not result in a net decrease in designated agricultural land, resulting in a less-than-significant impact.

3. **Conflict with Existing Agricultural Zoning or William Act Contracts**
   
a. **Programs and Policies**
   
The majority of new housing that could be developed under the proposed programs and policies would be in urbanized areas. Second units and farmworker housing constructed on agricultural lands would not pose conflicts with agricultural zoning or activities because second units would be subject to the location and size requirements of the County Zoning requirements for second units (Chapter 18.104.180) and would be limited in size. Farmworker housing is also governed by the Zoning Ordinance and is considered supportive of agriculture. When developed in conformance with Code requirements, second units would not conflict with the agricultural uses in the Agricultural Preserve (AP) zoning. Furthermore, the allowance of secondary and farmworker dwelling units on agricultural lands would encourage the continuation of agricultural activities and production on those lands by providing housing affordable to farmworkers.

Local policies and ordinances, such as Napa County’s Right to Farm Ordinance, protect agricultural uses from conflict with adjacent development and residential uses. The Right to Farm Ordinance protects the routine operational activities required to conduct agricultural activities. Therefore, complaints by residents of any new housing developed under the proposed Housing Element Update adjacent to agricultural or Williamson Act lands would not preclude agricultural uses from continuing.

Williamson Act lands are protected under contract to remain in agricultural use through the duration of the contract. In addition, some Williamson Act contracts preclude the construction of second units. Therefore, future development on Williamson Act lands would be subject to contract provisions.
Impacts related to conflicts with agricultural zoning or Williamson Act contracts would be *less than significant*.

b. Housing Sites

Housing development on the proposed housing sites would not result in any direct conflict with agricultural zoning or Williamson Act contracts. Although all of the Moskowite Corner sites and Spanish Flat Sites B and E are currently zoned as Agricultural Watershed, these and other housing sites identified in the proposed Housing Element have an Affordable Housing Combination District zoning overlay. Therefore, despite underlying agricultural zoning, all of these sites have been determined by the County to be suitable sites for the development of affordable housing. With this overlay zoning in place, housing development can occur on these housing sites in accordance with Napa County regulations and policies.

The Napa Pipe site is currently zoned for industrial use and is already urbanized. No Affordable Housing Combination District overlay is proposed for the Napa Pipe site, which would ultimately be rezoned for residential and other uses. There would still be no conflicts with existing agricultural zoning or Williamson Act contracts.

As discussed above, none of the proposed housing sites would result in conflicts with existing agricultural zoning. Furthermore, none of the proposed housing sites are under a Williamson Act contract. Therefore, impacts related to conflicts with agricultural zoning or Williamson Act contracts would be *less than significant*.

4. Changes in the Existing Environment which Result in Conversion to Non-Agricultural Use or Conflict with Agricultural Uses

a. Programs and Policies

The proposed programs and policies will not result in any direct conflict with agricultural uses or conversion to non-agricultural uses due to Napa County’s existing policies and ordinances that preclude such conflicts from occurring. As described above, local policies and ordinances, such as Napa County’s
Right to Farm Ordinance and the County Code requirements regarding setbacks between agricultural and residential uses, protect agricultural uses from conversion to non-agricultural uses and conflict with adjacent development. In addition, Section 18.104.010 of the Napa County Code requires setbacks between agricultural and residential uses. With these provisions in place, impacts related to conversion to non-agricultural use or conflict with agricultural uses would be less than significant.

b. Housing Sites
The only housing site currently being used for agricultural purposes is Angwin Site A. A portion of this site is currently used for agriculture, however the site is has a land use designation of Urban Residential and is zoned for Planned Development with the Affordable Housing Combination District (:AHCD) zoning. In addition, the site is in an urbanized area of Angwin, so conversion of this land to housing is considered to be less than significant when compared to the vast amount farmland throughout the county that would not be converted to other uses under the Housing Element.

Although housing development on the remaining housing sites would not create direct conflict with agricultural uses or conversion to non-agricultural uses, housing development could indirectly affect the existing environment on surrounding agricultural lands. All of the sites in the Angwin area, all of the sites in the Moskowite Corner area, and Spanish Flat sites A, B, E and F are adjacent to land with an agricultural zoning classification or land use designation.

Although these proposed housing sites are adjacent to agricultural lands, the local policies and ordinances described above (e.g., Napa County’s Right to Farm Ordinance) would protect agricultural uses from conflict with adjacent development. Therefore, with these policies and ordinances in place, impacts related to conversion of or conflict with agricultural uses would be less than significant.
E. Cumulative Impacts

The 2007 Napa County General Plan EIR found two significant and unavoidable impacts related to agriculture in Napa County:

- Implementation of the proposed General Plan Update would result in the loss of agricultural land as designated on the current Napa County General Plan Land Use Map.
- Implementation of the proposed General Plan could result in a conflict with existing agricultural zoning or Williamson Act contracts.

1. Net Decrease in Designated Agricultural Land

The 2007 Napa County General Plan EIR found that there would be a net loss of designated agricultural lands in the unincorporated portions of the county if adoption of an American Canyon growth boundary lead to future annexations of agricultural land. Subsequently, in December 2008, the Napa County Board of Supervisors adopted changes to the Land Use Map such that this possible loss of agricultural land was off-set by changes to Urban and Rural Residential areas (the so-called “urban bubbles”) pursuant to Action Item AG/LU-114.1 in the Napa County General Plan. With this change, the potentially significant cumulative impact resulting from loss of agricultural land would be reduced to a less-than-significant level. Because housing development under the proposed Housing Element Update would not decrease the amount of designated agricultural land in Napa County, the project would not contribute to a cumulative decrease in agriculturally designated land.

2. Conflict with Existing Agricultural Zoning or William Act Contracts

The 2007 General Plan EIR found that most of the land designated for urban development ("urban bubbles" with either Urban Residential or Rural Residential General Plan designations) contain some land that is zoned agricultural. Although this was an existing condition under the County’s General Plan Land Use Map prior to the 2008 Update, it is continued in the updated Land Use Map. Therefore, it would be possible for land that is zoned agricultural to be rezoned and redeveloped under the updated General Plan.
Housing constructed within the housing sites and through the housing programs of the proposed Housing Element Update would not contribute to this significant and unavoidable impact. Although the Moskowite Corner Sites A, B, C and D, and Spanish Flat Sites B and E have an existing zoning designation of Agricultural Watershed, each of these sites is also already designated with the Affordable Housing Combination District overlay. Furthermore, the housing programs under the proposed Housing Element Update would not require rezoning of agriculturally zoned land. The revisions of the AP zone to allow second units would not affect the agricultural zoning of those parcels. Therefore, the proposed Housing Element Update would not contribute to this impact.

F. Impacts and Mitigation Measures

There are no significant impacts related to agricultural resources as a result of the proposed Housing Element Update. Therefore, no mitigation measures are necessary.
4.2 Land Use

This chapter describes the potential effects of the proposed Housing Element on land use. All relevant information related to the regulatory framework and existing conditions identified in Chapter 4.2 of the 2007 Napa County General Plan Draft EIR is incorporated by reference and briefly summarized. New and updated information pertaining to land use regulations and existing conditions is also included.

A. Regulatory and Policy Framework

Section 4.2.2 of the 2007 Napa County General Plan Draft EIR contains a detailed description of the regulatory and policy framework related to land use in the project area, which includes federal, regional and local regulations.

Federal land use regulations include the Bureau of Land Management’s (BLM’s) Resource Management Plan (RMP) for Ukiah Field Office Planning Area and the federal Bureau of Reclamation’s (BOR’s) plans for visitor services at Lake Berryessa. The RMP provides direction in the management of the lands and resources administered by the BLM’s Ukiah Field Office, including BLM land in Napa County. The Visitor Services Plan sets a framework for land use changes along the shoreline of Lake Berryessa.

State and regional regulations and policies include the San Francisco Bay Conservation and Development Commission’s (BCDC’s) Bay Plan. The BCDC is comprised of 27 members representing various interests in the San Francisco Bay area. The BCDC is authorized to control the filling and dredging of the Bay, as well as shoreline development related to the Bay. The BCDC’s primary responsibility is to implement the San Francisco Bay Plan, which seeks to protect the Bay and enhance its shoreline, and BCDC’s shoreline jurisdiction extends from the Bay up the Napa River to Bull Island (near the Napa Airport).

The local regulatory framework regarding land use includes regulations administered by the Local Agency Formation Commission (LAFCO), Napa County and the Cities located within Napa County. LAFCO is a State-
mandated agency that is responsible for encouraging the logical formation and
development of local agencies. LAFCO encourages local agencies to develop
in a way that preserves open space and agricultural lands and discourages ur-
bansprawl. LAFCO has created a set of Policy Determinations for the
county regarding the preservation of agriculture and open space lands, the
promotion of orderly development, spheres of influence, countywide urban
development and service area policies and annexations.

The Napa County regulations discussed in the 2007 Napa County General
Plan Draft EIR include the Napa County Slow Growth Initiative (Measure
A) and the Agricultural Lands Preservation Initiative (Measure J). Voters
adopted Measure A on November 4, 1980 to support slow growth policies,
the reduction of sprawl and the preservation of Napa County’s character and
agricultural lands. Measure J was enacted by Napa County voters in 1990 to
preserve the county’s agricultural lands. Under Measure J, any change to ag-
ricultural land use map designations requires a vote of the people. As noted
earlier, voters adopted Measure P to reaffirm and extend provisions of Meas-

This section contains updated policy information pertaining to Napa
County’s General Plan.

1. Napa County General Plan
The Agricultural Preservation and Land Use Element of the Napa County
General Plan contains the County’s official Land Use Map. The Land Use
Map shows the land use designations for all of the land in the county. These
land use designations are shown in Figure 4.2-1. In addition, the Agricultural
Preservation and Land Use Element contains the following goals and policies
regarding land use.

Goal AG/LU-2: Concentrate urban uses in the County’s existing cities and
town and urbanized areas.
None
Goal AG/LU-5: With municipalities, other governmental units, and the private sector, plan for commercial, industrial, residential, recreational and public land uses in locations that are compatible with adjacent uses and agriculture.

Policy AG/LU-23: Consistent with longstanding practice and “smart growth” principles, the County will enact and enforce regulations that will encourage the concentration of residential growth within the County’s existing cities and town and urbanized areas designated on the Land Use Map.

Policy AG/LU-28: Consistent with the County’s longstanding commitment to urban-centered growth, new multi-family housing and other urban uses shall be directed to the incorporated cities and town and urbanized areas of Napa County.

Policy AG/LU-30: The County shall use a variety of strategies to address its long-term housing needs and to meet the state and regional housing requirements in its cyclical updates of the Housing Element. In addition to working with the state and ABAG to reduce the County’s regional allocation, these strategies shall include:

- Consider re-use of former industrial sites designated as Study Area on the Land Use Map to provide for a mix of uses, including affordable and market rate workforce housing as appropriate.
- Use of overlay designations to permit/facilitate multi-family housing on specific sites within designated urbanized areas shown on the Land Use Map.
- Collection and disbursement of housing impact fees to subsidize construction of affordable housing.
- Cooperative agreements with incorporated agencies within the County where these jurisdictions are able to accept additional housing requirements in exchange for other considerations.
- Actions that provide housing to farm workers and their families.
Use of County-owned land for affordable housing where this land is no longer needed to meet the County’s operational requirements and would be appropriate for housing.

Actions to allow production of second units in all areas of the unincorporated county as appropriate.

Other policies and programs which address the need for workforce housing.

Policy AG/LU-32: The County will maintain and improve the safety and adequacy of the existing housing stock in the County through application of applicable building and housing codes and related enforcement programs.

In addition these goals and policies, the Agricultural Preservation and Land Use Element also contains the following policies and action items pertaining to the housing site areas in the proposed Housing Element.

i. Angwin

Policy AG/LU-57: The County shall seek to maintain Angwin’s rural setting and character while providing opportunities for limited commercial services focused on the Angwin community.

Policy AG/LU-58: The “urbanized” area of Angwin shown on the County’s land use map and zoned Planned Development shall contain institutional uses (i.e., the college), residential uses, and limited neighborhood-serving non-residential uses.

Policy AG/LU-64: To maintain the rural atmosphere of the Angwin community, the County will not promote policies that encourage land uses that are incompatible with or out of character with the area, recognizing that a large part of the community’s character is derived from its wooded setting.

Policy AG/LU-65: The Angwin area should retain a variety of housing types to support residents, students, and employees of Pacific Union College and St. Helena Hospital.
ii. Moskowite Corner

Policy AG/LU-78: Moskowite Corners. Moskowite Corners lies at a critical crossroads and should be viewed as a staging area for the Lake Berryessa recreational area, with affordable housing for those who work in the area and services for residents and travelers. Moskowite Corners, with its winery and vineyards, should also be viewed as a link between Lake Berryessa communities and the viticultural economy of Napa Valley.

iii. Spanish Flat

Policy AG/LU-80: Spanish Flat. Spanish Flat lies at the heart of the Lake Berryessa recreational area and should be viewed as its primary resort community, with affordable housing for those who work in the area and an attractive “village center” providing commercial services to locals and visitors.

iv. Napa Pipe

Policy AG/LU-94: Sites designated as Study Area on the Land Use Map are urbanized sites adjacent to the City of Napa that shall be considered for revitalization and reuse by a mix of uses via site-specific planning. Site planning shall consider the availability and cost of urban services, opportunities for public access and recreation, impacts and benefits to Napa County and the City of Napa, and the potential for future annexation to the City.

Action Item AG/LU-94.1: Prior to approving non-industrial development the County shall adopt development standards for the Pacific Coast/Boca and Napa Pipe sites which shall include, but may not be limited to, buffering and visual screening from existing industrial uses and Syar Quarry, design features that include physical buffers (e.g., vegetation, landscape features, or walls in unique circumstances), building placement and orientation in a manner that physically separates these sites from incompatible operations of adjacent uses (e.g., truck traffic, odors, stationary noise sources), and implementation of other measures to address noise and vibration. Standards for the Napa Pipe site shall ensure conformance with the Napa County Airport Land Use Compatibility Plan.
Policy AG/LU-95: New land uses in the South County Industrial Areas shall be compatible with or buffered from adjacent industrial uses and consistent with the Land Use Compatibility Plan for Napa Airport.

B. Existing Conditions

Section 4.2.1 of the 2007 Napa County General Plan Draft EIR contains a detailed description of the existing land use conditions in Napa County. It describes conditions pertaining to existing land use in both unincorporated and incorporated areas, as well as land use consumption trends. Non-urban existing land uses comprise the vast majority of unincorporated lands in Napa County. Existing land uses within incorporated city limits include residential, commercial, industrial, park, public, agricultural and vacant lands.

Land use consumption trends show that very little urbanization or urban development has occurred in unincorporated areas of Napa County, with the exception of the Airport Industrial Area. The vast majority of land development has occurred in the incorporated cities, for the most part within Napa and American Canyon. Information regarding land uses in proximity to the housing sites is included throughout Section D, below.

C. Standards of Significance

A land use impact is considered significant if implementation of the Housing Element Update would result in any of the following (based on State CEQA Guidelines Appendix G):

1. Physical division of an established community or creation of a conflict between adjacent land uses; or

2. Substantial conflict with an adopted land use plan, policy or regulation of an agency with jurisdiction over the project (including, but not limited
to, the general plan, specific plan or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect.

**D. Impact Discussion**

This section discusses the potential impacts to Napa County’s land use as a result of the policies, programs and implementation of the proposed Housing Element Update. For each standard of significance, impacts are discussed separately in relation to the proposed Housing Element’s programs and potential housing sites.

1. **Physical Division of an Established Community or Conflict between Adjacent Land Uses**
   a. Programs and Policies

   The majority of new housing that would be developed under the proposed Housing Element Update programs would be in areas that are already urbanized or contain complementary uses (such as existing commercial or residential uses). Second units and farmworker housing constructed on agricultural lands would not pose conflicts with existing agricultural land uses because second units would be subject to the location and size requirements of the County’s Zoning requirements for second units (Chapter 18.104.180) and would be limited in size. Furthermore, the allowance of secondary and farmworker dwelling units on agricultural lands would encourage the continuation of existing and adjacent agricultural land uses by providing housing affordable to farmworkers.

   Development of housing in the Monticello Road Rural Residential area would occur in an area that is already primarily residential. The majority of the parcels in this area are currently developed with a single family residence on lots less than 1 acre in size. Four of these parcels contain two single family residences, and one lot is vacant. In addition, the parcel at the corner of Silverado Trail and Monticello Road contains a commercial use. As described in Chapter 3, given current development patterns and parcel sizes, only one parcel could develop at a higher density than one house per parcel under this
program: APN 049-161-009, which is 4.3 acres in size. The property owner has proposed to develop 13 units on this parcel, which would result in an average density of 3 du/ac. This is consistent with the parcels surrounding this 4.3-acre parcel, all of which contain a single-family residence and range in size from 0.3 acres to 0.9 acres.

Adding accessory residential units to scattered sites with commercial zoning (see General Plan figure AG/LU-2) would somewhat intensify use of these sites but would essentially result in urban development taking place on parcels that are already urbanized. These accessory units would be subject to a use permit requirement to ensure compatibility with existing and adjacent land uses and to ensure established communities are not divided.

Implementation of the proposed programs and policies would not result in the development of any new physical features that could physically divide a community, nor would it disrupt the overall existing land use patterns in the county. Therefore, any housing development occurring under the proposed Housing Element Update programs and policies would result in a less-than-significant impact.

b. Housing Sites
   i. Angwin, Moskowite Corner and Spanish Flat

None of the development proposed on the Angwin, Moskowite Corner or Spanish Flat housing sites would physically divide an established community since new housing on the identified sites would be compatible with surrounding development.

Land uses adjacent to Angwin Site A include the Angwin Volunteer Fire Station to the north, open space to the east, multi-family housing to the southeast, a strip mall commercial development to the south and low-density single-family residences to the west. Uses adjacent to Angwin Site B include undeveloped forest and grasslands to the north and east, a vineyard to the south, medium-density single-family residences further to the south along Cold Springs Road and Discoveryland Preschool to the west.
Land uses near the Moskowite Corner sites include a small commercial area, vineyards, a mobile home park at the intersection of Highway 128 and Steele Canyon Road, an RV storage yard immediately west of Site A and large tracts of undeveloped land.

Land uses adjacent to the Spanish Flat sites include undeveloped land to the north and east, a senior center to the west and undeveloped land and a mobile home park to the south.

The Angwin, Moskowite Corner and Spanish Flat sites are zoned with the Affordable Housing Combination District (:AHCD) overlay zoning (Section 18.82 of the Napa County Code). The design standards included in the :AHCD zoning (Section 18.82.070 of the Napa County Code) require that new development be designed, landscaped, and laid out in a manner sensitive to the visual character of the sites and their immediate surroundings. The enforcement of these zoning regulations will ensure that new housing developed on these housing sites is sensitive to adjacent existing land uses. Thus, on the Angwin, Moskowite Corner and Spanish Flat sites, potential land use impacts related to established communities and adjacent land uses would be less than significant.

ii. Napa Pipe

No existing residential communities would be affected by the development of the Napa Pipe sites. However, development of the Napa Pipe sites may result in conflicts with adjacent land uses. A portion of the Napa Pipe sites are in the Napa County Airport Land Use Compatibility Plan Zone D, where residential uses are not compatible with airport uses. Thus, residential uses on the site would be located on the northern 100 acres in Zone E, consistent with General Plan Policy AG/LU-95.

The Napa Pipe sites, which do not have the :AHCD overlay zoning, currently contain low-intensity industrial uses. The Napa Pipe sites are part of a larger industrial use complex located south of the City of Napa. There are office, research and development, and light industrial uses to the north and
east of the sites, the Napa River to the west and the highway and airport to the south. Therefore, development of the Napa Pipe sites could result in potential incompatibilities between future residential land uses and ongoing industrial uses adjacent to the sites to the north and east. This would be a significant impact requiring mitigation.

The Napa Pipe sites are also divided by a north-south Union Pacific (UP) Railroad line. Buildout of the Napa Pipe sites could result in an increase in the number of pedestrians, bicyclists, and motorists crossing the UP line. In order to ensure the safety of these groups, the Napa Pipe developer and the County would need to coordinate with staff from the Public Utilities Commission (PUC) and UP to identify appropriate safety-related mitigations. Furthermore, either County staff or the Napa Pipe developer would need to conduct additional coordination with the PUC, as needed, in the event that a project would modify existing crossings or require new crossings within the housing site. Unless coordination is completed and appropriate safety measures are incorporated into track crossings, the location of the UP line would result in a conflict between land uses that would be considered a significant impact requiring mitigation.

2. Conflict with an Adopted Land Use Plan, Policy or Regulation
   a. Programs and Policies

   Land use plans that could affect housing development under the proposed programs and policies on unincorporated county lands include the Napa County General Plan, the Napa County Zoning Code, the Napa County Airport Industrial Area Specific Plan, the Napa County Airport Land Use Compatibility Plan, BCDC’s San Francisco Bay Plan, the BOR’s Visitor Service Plan and BLM’s Resource Management Plan. The proposed programs and policies do not propose any changes to these land use plans. The exact locations of future housing units constructed under the proposed Housing Element are currently unknown. However, all future housing development would be located and designed in accordance with the policies and regulations of those agencies with jurisdiction over the land that is proposed to be devel-
oped. Therefore, the programs and policies would not conflict with adopted land use plans, resulting in a less-than-significant impact.

b. Housing Sites
All future housing development on the proposed housing sites will be located and designed in accordance with the policies and regulations of those agencies with jurisdiction over the land that is to be developed.

i. Angwin, Moskowite Corner and Spanish Flat
As shown in Figures 4.2-2 through 4.2-4, portions of Angwin Site B; Moskowite Corner Sites B, C and D and Spanish Flat Sites E and F extend into the General Plan land use designation boundary for Agriculture, Watershed and Open Space. However, these portions of the housing sites are steep and/or not suitable for housing, and the Housing Element assumes that these small portions of the sites would remain undeveloped. The Housing Element does not propose to re-designate any of the Angwin, Moskowite Corner and Spanish Flat sites. Because housing developed on these sites would be consistent with existing land use plans, policies and regulations, land use impacts would be less than significant.

As shown in Figure 4.2-5, Angwin Site B is also located within Zones A, B and F of the Angwin-Virgil O Parrett Field airport. Residential uses are not considered appropriate in Zones A and B because of aircraft approaches and departures. However, residential uses are considered compatible in Zone F. The Housing Element Update does not propose residential uses within Zones A or B. The Airport Land Use Compatibility Plan for Angwin may be updated and revised following completion of an ongoing feasibility study which is looking at whether the County should purchase the privately-owned airport. At present, the County is not able to anticipate what the changes might be, and no impact related to conflicts with the Airport Land Use Compatibility Plan have been identified.
Site A
Site B

General Plan Land Use Designation

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<thead>
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<th>Land Use Designation</th>
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</thead>
<tbody>
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<td>Urban Residential</td>
</tr>
<tr>
<td>Agriculture, Watershed and Open Space</td>
<td>Agriculture, Watershed and Open Space</td>
</tr>
</tbody>
</table>

Source: County of Napa, 2008; Design Community & Environment, 2008
Figure 4.2-3

General Plan Land Use Designation

- Rural Residential
- Agriculture, Watershed and Open Space

Source: County of Napa, 2008; Design Community & Environment, 2008
Figure 4.2-4
General Plan Land Use Designation

<table>
<thead>
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<th>Yellow</th>
<th>Rural Residential</th>
</tr>
</thead>
<tbody>
<tr>
<td>Green</td>
<td>Agriculture, Watershed and Open Space</td>
</tr>
</tbody>
</table>

Source: County of Napa, 2008; Design Community & Environment, 2008
Figure 4.2-5

ANGWIN-VIRGIL O PARRETT FIELD AIRPORT ZONES AND ANGWIN HOUSING SITES

Source: County of Napa, 2002 and 2008; Design Community & Environment, 2008
ii. Napa Pipe

The Housing Element proposes to change the General Plan land use designation for the Napa Pipe sites from Study Area to Transitional. The General Plan designation of Study Area allows for industrial uses, and envisions site-specific planning, rezoning and General Plan amendments prior to allowing for mixed or residential use. The proposed General Plan designation of Transitional would allow a mix of uses, including a high density residential neighborhood on the northern portion of the site.

The Zoning designation for the Napa Pipe sites would subsequently be changed from Industrial – Airport Compatibility (I-AC) to Napa Pipe Residential – Airport Compatibility (NPR-AC) on the northern part of the site and Napa Pipe Business Park – Airport Compatibility (NPBP-AC) on the southern portion of the site. These designations would be consistent with the proposed General Plan designation of Transitional discussed above.

As shown in Figure 4.2-6, the Napa Pipe sites are located within Zones D and E of the Napa County Airport Land Use Compatibility Plan (ALUCP). Zone D, which covers the southern portion of the Napa Pipe sites, presents a moderate accident risk, frequent noise intrusion and routine overflights below the altitude of 1,000 feet. For this zone, all residential uses and landfills are prohibited. Densities of 150 persons per acre in and outside of structures are also prohibited. Consistent with General Plan Policy AG/LU-95, the Housing Element Update does not propose residential uses within Zone D, so no conflict with Zone D would occur.

Zone E covers the remainder of the Napa Pipe sites and presents a low accident risk. Overflight annoyance is the primary potential impact on development within this area. Zone E allows residential uses, provided that maximum densities are in accordance with local General Plan and zoning designations. As described above, the Napa Pipe project will require amendments to the Napa County General Plan and Zoning Map, which will increase the maximum allowable density on the site. General Plan and Zoning Map amendments will be reviewed by the Airport Land Use Commission for
Figure 4.2-6

NAPA AIRPORT
LAND USE COMPATIBILITY PLAN ZONES
AND NAPA PIPE HOUSING SITES

Source: County of Napa, 2002 and 2008; Design Community & Environment, 2008
compatibility, however the impact is expected to be *less than significant* since residential uses would occur in Zone F rather than Zone D.

The Napa Pipe site is located adjacent to the City of Napa, and would require an encroachment permit for road improvements within the City’s jurisdiction. The project is also likely to result in traffic impacts requiring mitigation improvements to City roads and State highways (in addition to County facilities). The City’s General Plan and regulations would apply to improvements within their jurisdictions, and State approval would be required for improvements to State highways. Traffic impacts and mitigations are analyzed in Section 4.4, and potential conflicts with City/State regulations and policies are noted in that context.

### E. Cumulative Impacts

The 2007 Napa County General Plan EIR did not find any significant and unavoidable impacts related to land use in Napa County. This project would result in some land use changes, but there is no evidence that it would contribute to any significant and unavoidable land use impacts.

### F. Impacts and Mitigation Measures

**Impact LU-1:** Proposed residential land uses on the Napa Pipe sites could conflict with adjacent industrial uses.

**Mitigation Measure LU-1:** In compliance with Action Item AG/LU-94.1 of the Napa County General Plan, future development on the Napa Pipe sites will be required to include design features to buffer proposed residential uses from industrial uses. Such features shall include, but are not limited to:

- Buffering and visual screening from existing industrial uses.
Design features that include physical buffers and design features, such as vegetation, landscape features and walls.

Building placement and orientation that physically separates new development from incompatible operations of adjacent uses, such as truck traffic, odors and stationary noise sources.

Measures to address noise and vibration.

**Significance After Mitigation:** Less than significant.

**Impact LU-2:** Proposed land uses on the Napa Pipe sites could conflict with the existing Union Pacific Railroad line bisecting the project site.

**Mitigation Measure LU-2:** The Napa Pipe developer and the County will coordinate with staff from the Public Utilities Commission and Union Pacific to identify desired railroad crossings and implement required safety equipment and improvements. Requirements may include signs, audible signals, gates that close when a train approaches and fencing along other sections of the right of way. These or other, similar required improvements will be installed by the developer during construction of roads and other infrastructure on site. The developer will be responsible for making any modifications that are needed to existing crossings, and for constructing new crossings acceptable to the Public Utilities Commission.

**Significance After Mitigation:** Less than significant.
This chapter describes the potential effects of the proposed project on population, housing and employment. All relevant information related to the regulatory framework and existing conditions identified in Chapter 4.3 of the 2007 Napa County General Plan Draft EIR is incorporated by reference and briefly summarized. New and updated information, if any, pertaining to population, employment and housing regulations and existing conditions is also included.

A. Regulatory and Policy Framework

Section 4.3.2 of the 2007 Napa County General Plan Draft EIR contains a detailed description of the existing population, employment and housing regulations in Napa County, which includes regional and local regulations and policies. Such existing regulations and policies include:

♦ Housing needs requirements allocated by the Association of Bay Area Governments (ABAG), who distributes the State-mandated regional share of required housing units among each of its jurisdictions.

♦ Napa County General Plan Housing Element requirements, which include stated goals, policies, objectives and implementation programs addressing housing development in Napa County, and which are being updated through this project.

♦ Napa County’s Measure A Growth Management System, an initiative for a slow growth general plan that is meant to reduce urban sprawl and preserve the county’s character and agricultural lands.

♦ The Agricultural Lands Preservation Initiative, which is intended to preserve agricultural land that is designated Agricultural Resource (AR) or Agricultural, Watershed and Open Space (AWOS). Any change to these land use designations would require a public vote.

This section contains updated policy information pertaining to Napa County’s General Plan.
1. Napa County General Plan

The Agricultural Preservation and Land Use Element of the Napa County General Plan contains the following policies pertaining to population, housing and employment.

Policy AG/LU-30: The County shall use a variety of strategies to address its long-term housing needs and to meet the state and regional housing requirements in its cyclical updates of the Housing Element. In addition to working with the state and ABAG to reduce the County’s regional allocation, these strategies shall include:

- Consider re-use of former industrial sites designated as Study Area on the Land Use.
- Map to provide for a mix of uses, including affordable and market rate work force housing as appropriate.
- Use of overlay designations to permit/facilitate multi-family housing on specific sites within designated urbanized areas shown on the Land Use Map.
- Collection and disbursement of housing impact fees to subsidize construction of affordable housing.
- Cooperative agreements with incorporated agencies within the County where these jurisdictions are able to accept additional housing requirements in exchange for other considerations.
- Actions that provide housing to farm workers and their families.
- Use of County-owned land for affordable housing where this land is no longer needed to meet the County’s operational requirements and would be appropriate for housing.
- Actions to allow production of second units in all areas of the unincorporated county as appropriate.
- Other policies and programs which address the need for workforce housing.
Policy AG/LU-31: The County will work with the cities and town to see that low and moderate cost housing is provided to address the needs of low and moderate income householders in Napa County. In addition, the County will accept responsibility for meeting its fair share of the housing needs, including a predominant percentage generated by any new employment in unincorporated areas.

Policy AG/LU-33: The County will promote development concepts that create flexibility, economy, and variety in housing without resulting in significant environmental impacts and without allowing residences to become timeshares, resorts, hotels, or similar tourist-type accommodations.

The Economic Development Element of the Napa County General Plan contains the following policy pertaining to population, housing and employment.

Policy E-13.5: Increasing the supply of workforce housing will help the County maintain a stable and locally based workforce, reduce commuter traffic and air emissions, and support the local economy.

In addition, Policy AG/LU-119 contains the County’s Growth Management System, which limits population growth in the unincorporated county by establishing annual limits for various types of residential building permits.

B. Existing Conditions

1. 2007 Napa County General Plan Draft EIR Summary
Section 4.3.1 of the 2007 Napa County General Plan Draft EIR contains a detailed description of the existing population, employment and housing conditions in Napa County. The 2007 Napa County General Plan Draft EIR describes conditions pertaining to population and demographic trends, housing allocations, housing trends and employment. This information is summarized below.
a. Population and Demographic Trends
The U.S. Census estimated the population of Napa County to be 134,100 persons in 2005. Between 2000 and 2005, consistent with existing General Plan policies, population growth within Napa County was greatest within the incorporated cities and particularly within the American Canyon city limits. The City of Napa had the highest absolute growth in Napa County, adding just under half of the total growth in the county. The unincorporated area grew at a rate of approximately 1 percent between 2001 and 2004.

b. Regional Housing Needs Allocations
For the 2000 to 2007 housing cycle, ABAG’s “fair share” housing needs allocation for all jurisdictions in Napa County was 7,331 units. Of those units, 41 percent were designated above moderate income, 25 percent were designated moderate income, 14 percent were designated low income and 20 percent were designated very low income. The 2006 income limits established for Napa County by the State Department of Housing and Community Development (HCD) were $90,000 for moderate, $59,600 for low income and $37,500 for very low income.

c. Housing Trends
The State Department of Finance estimated that in 2006, the average household size for the unincorporated area was 2.56 persons per household, which was slightly lower than the 2.62 average for the entire county.

According to the 2005 American Community Survey, there were 48,202 occupied housing units in Napa County. The State Department of Finance estimated that in 2004, 11,674 units were located in the unincorporated area. A majority of housing units in the unincorporated area are single-family homes, almost half of which were built before 1960. Between 1990 and 2000, 90 percent of total constructed housing units in the unincorporated area were single-family homes. Since 1992, almost no new multi-family units have been built in the unincorporated area.
The unincorporated area has a high average vacancy rate of about 15 percent, while the county as a whole has an average vacancy rate of about 6 percent. The 2000-2007 Napa County Housing Element suggests that adjusting the vacancy rate for the number of recreational and/or vacation units in the county lowers the figure and gives a more accurate vacancy rate for the unincorporated area. After adjusting the 1990 and 2000 vacancy rates to account for recreational and/or vacation units, the vacancy rate for both years was found to be just under 5 percent. According to HCD, a desirable vacancy rate in a community is 5 percent. Vacancy rates below 5 percent suggest that the demand for housing may exceed its supply, which would increase costs.

d. Employment
In October 2006, there were 66,840 jobs in the county. More than half of these jobs were in the Napa city limits. The greatest number of jobs was in the manufacturing/wholesale and retail industries, while the fewest jobs were in agricultural or mining industries. The county unemployment rate was 3 percent.

2. 2008 Population and Housing Estimates Updates
The State Department of Finance has published 2008 population and housing estimates,\(^1\) which are summarized below, and used for the impact discussion of this chapter.

a. Population and Demographic Trends
In 2008, the population of Napa County is estimated to be 136,704 persons. About 21 percent, or 28,816 persons, live in the unincorporated area of the county.

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b. Housing Trends

In 2008, the average household size in the unincorporated area of Napa County is estimated to be 2.54 persons per household. The average household size for the entire county is estimated to be 2.59 persons per household.

In 2008, there are 50,588 occupied housing units in Napa County, of which 10,235 units are located in the unincorporated area. A majority of the housing units in the unincorporated area continue to be single-family homes.

The average vacancy rate for the unincorporated area continues to be high, at 14.6 percent; the average vacancy rate for the entire county remains at 6 percent. Again, the above-average vacancy rate in the unincorporated County is due to a high number of vacation homes that are vacant for much of the year.

3. Housing Element Update Projections

As part of the Housing Needs Assessment for the Housing Element Update, Napa County projected population, housing and employment figures for 2015 and 2030. These projections are based on a likely scenario of growth and development in Napa County. In 2015, the Housing Needs Assessment projects that the total population of unincorporated Napa County will be 31,397 people, and there will be 12,687 households and 25,524 jobs. In 2030, the Housing Needs Assessment projects that the total population of unincorporated Napa County will be 36,114 people, and there will be 14,718 households and 29,234 jobs. The population and households projections for 2015 are lower than what this EIR projects with full buildout of the proposed project, as this EIR uses a more conservative approach in order to be cautious about the project’s possible environmental effects.

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C. Standards of Significance

According to Section 15131(a) of the State CEQA Guidelines, economic and social effects are not treated as significant effects on the environment. However, if the proposed project were to cause physical changes as a result of economic or social changes (such as the destruction of habitat resulting from housing construction to accommodate increases in population), then the physical effects could be considered significant.

A population, employment or housing impact is considered significant if implementation of the Housing Element Update would result in any of the following:

1. Inducement of substantial growth or concentration of population in an area either directly or indirectly (e.g., through projects in an undeveloped area or extension of major infrastructure) such that significant physical environmental impacts would occur, based on State CEQA Guidelines Appendix G (“Substantial” is defined here as exceeding the County’s 1 percent population growth standard as implemented by the Growth Management System, or exceeding regional growth projections provided by ABAG);

2. Substantial alteration of the ratio or “balance” between housing and employment in the unincorporated area; or

3. Displacement of substantial numbers of existing housing or people, necessitating the construction of replacement housing elsewhere (based on State CEQA Guidelines Appendix G).

D. Impact Discussion

This section discusses the potential impacts to Napa County’s population, housing and employment as a result of the policies, programs, and implementation of the proposed Housing Element Update. Updated population, housing or employment information, where available, are used to discuss such potential impacts. For each standard of significance, impacts are discussed
separately in relation to the proposed Housing Element’s programs and housing sites.

1. **Substantial Growth or Concentration of Population**

Impacts associated with the substantial growth or concentration of population due to the proposed Housing Element update are analyzed based on consistency with the County’s Growth Management System and in comparison to ABAG’s 2007 Projections for the unincorporated area of Napa County.

a. **Programs and Policies**

The proposed Housing Element Update includes goals, objectives, policies and programs to assist the County in assessing housing needs, providing housing directly, and facilitating the construction of needed units. Through the implementation of programs, the County proposes to accommodate up to 153 units over the 2009-2014 housing cycle. These programs include second unit production and second units on parcels zoned Agricultural Preserve, farm worker housing production, density bonus for mobile home parks with Planned Development zoning, accessory units on parcels zoned Commercial Limited (CL) or Commercial Neighborhood (CN) and redesignations in the Monticello Road Rural Residential area.

This increase of 153 units would occur at an average rate of approximately 30 units per year, with variation depending on market conditions. This increase in the number of housing units per year does not exceed the 114 units per year allowed under the Growth Management System.

At an average household size of 2.54 persons per household in Napa County, the 153 housing units developed under the proposed programs and policies would increase the population of the unincorporated area by about 389 residents by 2014. According to ABAG’s 2007 Projections, the population of the unincorporated area in Napa County is projected to increase from 28,800 in 2010 to 29,600 by 2015, an increase of 800 persons. The 389 new residents anticipated by the proposed policies and programs would not exceed ABAG’s projected population increase for the unincorporated area in Napa County.
b. Housing Sites

The proposed housing sites would generate 1,245 new housing units spread over four different locations – Angwin, Moskowitz Corner, Spanish Flat and Napa Pipe – throughout Napa County over the 2009-2014 housing cycle. This increase would occur at an average rate of approximately 239 units per year, with variation depending on market conditions. This increase in the number of housing units per year exceeds the 114 units per year allowed under the Growth Management System by 125 units per year, totaling to 625 new units beyond the permitting limits over the five year horizon of the proposed Housing Element.

However, the Growth Management System requires that at least 15 percent of housing units permitted each year be designated as affordable rental or for-sale units available to those earning up to 120 percent of the median income. Permits for affordable for-sale and rental units and secondary dwelling units can be accumulated if not used during the year, and can be issued to qualified applicants regardless of the annual permitting limits. The County currently has 566 of these unused permits, called Category 4 permits, which can be used to offset the exceeded number of building permits generated by the potential housing sites.

Permits for market rate units can also be accumulated when unused, over a maximum period of three years, regardless of annual permitting limits. Out of 97 total available permits per year for market rate units, the County issued 66 permits in 2006 and 53 permits in 2007. Thus, the County currently has a total of 75 unused permits for market rate units for the current three-year rollover period.

The 566 unused Category 4 permits and the 75 unused permits for market rate units sum to a total of 641 available unused permits for the county. The 641 total available unused permits are sufficient to accommodate the 625 new units to be produced beyond the Growth Management System permitting
limits, provided that a high percentage of the units are affordable (Category 4).

At an average household size of 2.54 persons per household in Napa County, the 1,245 housing units developed on the proposed housing sites would increase the population of the unincorporated area by about 3,162 residents by 2014. According to ABAG’s 2007 Projections, the population of the unincorporated area in Napa County is projected to increase by 800 persons by 2015. The total of 3,162 new residents anticipated by the proposed housing sites substantially exceeds ABAG’s projected population increase for the unincorporated area.

Because the projected population increase generated by the proposed housing sites in the unincorporated area exceeds the threshold of the population increase projected by ABAG, the impact on population growth would be significant and unavoidable.

2. Alteration of the Housing and Employment Balance

To determine the impact on the housing and employment balance, the projected future housing and employment ratio for the unincorporated area in Napa County, which includes the new housing units to be generated by the proposed Housing Element, is compared to the existing jobs to housing ratio.

Numbers of existing jobs and households were taken from the Napa County 2007 General Plan EIR, which is based on ABAG data for 2005. Numbers for jobs in 2015 are those provided in ABAG’s Projections 2007. Because Projections 2007 does not account for the housing development under the proposed project, the number of households in 2015 was calculated to reflect this additional development. In order to calculate the number of households in 2015, the proposed Housing Element’s projected buildout of

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3 ABAG projects data for every five years, and therefore does not have 2008 projections for current existing numbers. These “existing” numbers are based on 2005 figures in order to be consistent with the Napa County 2007 General Plan EIR.
1,398 new dwelling units was added to the California Department of Finance estimate that there are 10,235 existing households in unincorporated Napa County in 2008.4

Table 4.3-1 below summarizes the existing and projected jobs to housing ratio for the unincorporated area and Napa County as a whole. The ratio for the county as a whole is provided for informational purposes. Impacts related to the county’s transportation network, air quality and noise, and any related mitigation measures, are analyzed in later sections of this document.

In 2005, ABAG projected the unincorporated area to have a total of 23,180 jobs and 10,090 households, providing an approximately 2.30 jobs to housing ratio. This means that for every household in the unincorporated area, there are about 2.30 jobs.

Adding the 1,398 new housing units generated by the proposed Housing Element Update to the existing 10,235 households in 20085 would result in a total of 25,250 housing units in 2015. ABAG projects that there will be 11,633 jobs in 2015, resulting in a jobs to housing ratio in the unincorporated of 2.17. This reduction in the jobs to housing ratio from 2005 represents an improvement the jobs/housing balance: increased housing opportunities decrease the number of workers who commute into the county for work but cannot find housing within the county. Therefore, the proposed Housing Element Update would have a beneficial impact on the housing and employment balance.

4 It should be noted that this 2008 “existing” number from the Department of Finance is very close to the “existing” number from the 2007 Napa County General Plan EIR.

3. Displacement of Existing Housing or People

To determine the impact associated with the proposed Housing Element on the displacement of existing housing or people in Napa County, this section analyzes the effect of proposed programs and policies on existing housing and people in the county and analyzes the existing land use pattern of the proposed housing sites.

a. Programs and Policies

The proposed programs and policies include facilitating the development of secondary dwelling units, facilitating the development of farmworker housing, providing density bonuses on planned development mobile home parks, providing accessory units on parcels zoned Commercial Limited/Commercial Neighborhood, and redesignating land in the Monticello Road Rural Residential Area, among others. None of these programs and policies would displace existing housing or people, as they are intended to add new housing to existing housing areas or encourage the development of new housing in areas where it is needed and where little or no housing currently exists. Therefore, the 153 new housing units to be generated by the proposed programs and

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### TABLE 4.3-1 JOBS TO HOUSING RATIO, NAPA COUNTY

<table>
<thead>
<tr>
<th></th>
<th>Existing (2005)</th>
<th>2015 Projections</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Unincorp. Area²</td>
<td>County¹</td>
</tr>
<tr>
<td>Number of Jobs</td>
<td>23,180</td>
<td>70,690</td>
</tr>
<tr>
<td>Number of Households</td>
<td>10,090</td>
<td>49,270</td>
</tr>
<tr>
<td>Jobs to Housing Ratio</td>
<td>2.30</td>
<td>1.43</td>
</tr>
</tbody>
</table>

² ABAG Projections 2007.
¹ 2015 households in the unincorporated area were calculated by adding the proposed Housing Element’s projected buildout of 1,398 new dwelling units to the 10,235 households in unincorporated Napa County in 2008, as estimated by the California Department of Finance.
policies would have a *less-than-significant* impact associated with the displacement of existing housing or people in the unincorporated area.

b. Housing Sites
The proposed housing sites consist of undeveloped land and/or non-residential existing uses. Therefore, the 1,245 new housing units to be generated on these proposed housing sites would have a *less-than-significant* impact associated with the displacement of existing housing or people in the unincorporated area.

**E. Cumulative Impacts**

The 2007 Napa County General Plan EIR found one significant and unavoidable impact related to population, housing and employment in Napa County:

- Implementation of the proposed Napa County General Plan Update could result in substantial growth in population, housing or employment that could be in excess of regional projections or the one percent per year housing unit standard set forth in the Napa County Growth Management System.

The 2007 Napa County General Plan Draft EIR found that although housing and population growth as a result of the General Plan Update would be consistent with the County’s Growth Management System, growth would exceed regional projections provided by ABAG and would therefore constitute a significant and unavoidable impact. The new housing units generated by the proposed Housing Element would contribute to this significant and unavoidable impact by adding to the housing and population growth in Napa County.

As noted above, the 2007 Napa County General Plan Draft EIR found that the General Plan would be consistent with the County’s Growth Management System. However, the General Plan did not include the Napa Pipe development project. It is anticipated that the full Napa Pipe project would be
developed within the General Plan horizon year of 2030, adding a total of 2,580 new housing units for all three phases of development. In combination with the General Plan buildout of 2,935 new housing units, it is anticipated that approximately 5,515 new units would be built by 2030. The production of these total new units over the General Plan buildout period from 2005 to 2030 would average out to approximately 220 building permits per year, exceeding the 114 permits per year allowed under the Growth Management System. This would result in a significant impact on population, housing and employment. The proposed Housing Element Update would also contribute to this significant impact by adding to the housing and population growth in Napa County.

The 2007 Napa County General Plan EIR found that there would be a less-than-significant impact related to alterations to the housing and employment balance. Under the General Plan, in 2030, it is projected that there will be 12,579 dwelling units and 31,309 jobs. The proposed project, in combination with the 3,200 new dwelling units and 1,000 new jobs anticipated with full buildout of the Napa Pipe project, would increase the 2030 projections to 17,177 dwelling units and 32,309 jobs. This would result in a ratio of 1.9 jobs per household, representing an improvement over the existing ratio.

F. Impacts and Mitigation Measures

Impact POP-1: The housing programs and sites included in the proposed Housing Element could generate units potentially in excess of ABAG population projection for 2015. Because there are no feasible measures to mitigate this impact to a less-than-significant level, this impact is significant and unavoidable.

Impact POP-2: The proposed Housing Element would contribute to the General Plan’s significant and unavoidable cumulative impact resulting from exceeding ABAG’s regional population projections and the County’s 1 percent population growth standard derived from the Growth Management System. Because there are no feasible measures to mitigate this impact to a less-
than-significant level, the proposed project contributes to a significant and unavoidable cumulative impact.
This chapter describes the potential effects of the proposed Housing Element on transportation. All relevant information related to the regulatory framework and existing conditions identified in Chapter 4.4 of the 2007 Napa County General Plan Draft EIR is incorporated by reference and briefly summarized. New and updated information pertaining to transportation and circulation regulations and existing conditions is also included.

**A. Regulatory and Policy Framework**

Section 4.4.2 of the 2007 Napa County General Plan Draft EIR contains a detailed description of the regulatory framework related to transportation in the project area, which includes federal, State, regional and local regulations and policies. Additional and updated information about the regulatory setting is provided below.

1. **State Policies and Regulations: California Department of Transportation**

The California Department of Transportation (Caltrans) is responsible for the maintenance and operation of State routes and highways. Within the project study area, Caltrans’ facilities include Highway 12, Highway 29, Highway 221 (Napa-Vallejo Highway), and Highway 121 (Imola Avenue, Soscol Avenue, and Silverado Trail). Caltrans maintains a volume monitoring program and reviews local agencies’ planning documents to assist in its forecasting of future volumes and congestion points. The *Guide for the Preparation of Traffic Impacts Studies* (January 2001) published by Caltrans is intended to provide a consistent basis for evaluating traffic impacts to State facilities. According to this document, Caltrans strives to maintain service levels on State facilities at the transition between level of service (LOS) C and LOS D. In cases where this level of service is not feasible, the lead agency should consult with Caltrans to establish an appropriate level of service threshold. If an existing State highway facility is operating worse than the appropriate target level of service, the existing measure of effectiveness (MOE) should be maintained.
2. Regional Policies and Regulations: Metropolitan Transportation Commission

The Metropolitan Transportation Commission (MTC) serves as the transportation planning, coordinating, and financing agency for the nine-county San Francisco Bay Area. The MTC created and maintains the Metropolitan Transportation System (MTS), a multimodal system of highways, major arterials, transit services, rail lines, seaports, airports and transfer hubs that are critical to regional transportation between the nine Bay Area counties. MTS facilities within the study area include Highways 12, 29, 121 and 221, as well as Silverado Trail, Soscol Avenue, First Street, Imola Avenue and Airport Boulevard. The MTS is incorporated into MTC’s 2001 Regional Transportation Plan (RTP), and is used as a guideline in prioritizing for planning and funding of facilities in the Bay Area. Facilities included in the MTS provide access to major Bay Area activity centers, supply convenient and efficient connections, and/or provide alternative routes or modes for congested areas or regions with limited facilities.

3. Local Policies and Regulations
a. Napa County General Plan

The Circulation Element of the Napa County General Plan provides a map of the county’s vehicular circulation network and outlines three goals that address circulation and land use, State highway routes and county roads, transit services, air transportation, rail service, navigable waterways and non-motorized transportation. These goals are provided below.

Goal CIR-1: The County’s transportation system shall be correlated with the policies of the Agricultural Preservation & Land Use Element and protective of the County’s rural character.

Goal CIR-2: The County’s transportation system shall provide for safe and efficient movement on well-maintained roads throughout the County, meeting the needs of Napa County residents, businesses, employees, visitors, special needs populations, and the elderly.
Goal CIR-3: The County’s transportation system shall encompass the use of private vehicles, transit, paratransit, walking, bicycling, air travel, rail, and water transport.

The circulation map generally provides for increased capacity on roads south of the City of Napa (Highway 29, Newell Drive/Devlin Road extensions), and for maintaining the rural character of County roads elsewhere in the county. The Circulation Element of the Napa County General Plan also contains the following policy pertaining to this analysis:

Policy CIR-16: The County shall see to maintain an adequate level of service on roads and at intersections as follows. The desired level of service shall be measured at peak hours on weekdays.

♦ The County shall seek to maintain an arterial LOS D or better on all county roadways, except where maintaining this desired level of service would require the installation of more travel lanes than shown on the Circulation Map.

♦ The County shall seek to maintain a LOS D or better at all signalized intersections, except where the level of service already exceeds this standard (i.e. LOS E or F) and where increased intersection capacity is not feasible within the existing right of way.

♦ No single level of service standard is appropriate for unsignalized intersections, which shall be evaluated on a case-by case basis to determine if signal warrants are met.

The County’s interpretation of these policies with respect to this project is discussed later in this report.

b. Napa County Transportation and Planning Agency
The Napa County Transportation and Planning Agency (NCTPA) serves as the countywide transportation planning body for the incorporated and unincorporated areas of Napa County. Since the County does not have a congestion management agency, NCTPA works with the Metropolitan Transporta-
tion Commission (MTC) to prepare the Napa County portion of the Regional Transportation Plan (RTP), which is a long-range development plan to allocate State and federal transportation funds, as described in Section A.2.a above. In 1999, the NCTPA adopted the Strategic Transportation Plan, which the NCTPA intended to be a long-range guide for decision-making and funding of Napa County roadways, transit and bicycle facilities. The Strategic Transportation Plan includes the following goals:

- Secure funding to maintain and improve the existing transportation infrastructure in the Napa region.
- Ensure the equitable distribution of available funding.
- Reduce vehicle accidents through the implementation of projects that enhance safety.
- Increase the role of transit in alleviating congestion and enhancing mobility.
- Enhance transit through the expansion and efficient integration of services and facilities.
- Preserve the Napa region’s commitment to extraordinary paratransit service that exceeds ADA minimum requirements.
- Ensure that all transit services, facilities, and programs are designed for “Universal Access.”
- Increase bicycle use for commute as well as recreational trips.
- Preserve the efficiency and effectiveness of travel corridors by considering all modes in the planning, designing, and construction process.
- Ensure that the general objectives of the State (CEQA) and federal (NEPA) environmental guidelines are used in the planning, programming, and implementing stages of project approval and development.

Facilities that are included in this transportation analysis and that are part of the Strategic Transportation Plan include Highways 29, 12, 121 and 221, as well as Silverado Trail.
c. City of Napa General Plan

The City of Napa adopted its General Plan, *Envision Napa 2020*, in December 1998. This document includes the following three major transportation objectives:

- Develop a transportation infrastructure that provides for an acceptable traffic flow and provides access to all destinations.
- Create a citywide transportation system that allows users to choose from a variety of safe transportation options including an adequate system of streets, transit, pedestrian and bicycle facilities.
- Minimize the negative effects of additional automobile traffic and other transportation.

The following policies are included in *Envision Napa 2020*:

- The City shall ensure that traffic levels of service will not exceed mid-range LOS D at all signalized intersections on arterial and collector streets with the following exceptions, where midrange LOS E will be permitted. Only those locations that are included in the project study area are listed:
  - Downtown Napa within the area bounded by Soscol Avenue, First Street, California Boulevard, and Third Street.
  - Silverado Trail between Soscol Avenue and First Street.
- The City shall ensure that all new development and redevelopment will meet adopted level of service for transportation facilities unless findings are made that achieving other specific public goals found in this General Plan outweigh this requirement.
- The City shall focus on signalized intersections when evaluating street system level of service.
- When reviewing projects, the City shall monitor stop-controlled intersections using level of service and the Highway Capacity Manual as a guideline, applying Caltrans signal warrant evaluation as indicated, and requiring mitigation as necessary.
d. City of Napa Policy Guidelines for Traffic Impact Analyses


Because Napa County will be the lead agency for purposes of the Housing Element’s environmental review, significance criteria were developed based on the County’s policies. However, given the potential that development on the Napa Pipe sites could significantly impact traffic conditions in the City of Napa, the criteria were adjusted somewhat to reflect City review practices.

B. Level of Service

Transportation engineers and planners commonly use a grading system called level of service to measure and describe the operational status of intersections on a local roadway network. Level of service is a semi-quantitative description of an intersection’s operation, ranging from LOS A (indicating free flow traffic conditions with little or no delay) to LOS F (representing oversaturated conditions with traffic flows exceeding design capacity, resulting in long queues and delays).

1. Signalized Intersections

Signalized intersection traffic conditions and resulting level of service derive from the Highway Capacity Manual (HCM) – Special Report 209 (Chapter 16) method. This operations analysis uses various intersection characteristics, including traffic volumes, lane geometry and signal phasing, to estimate the average control delay per vehicle. Control delay is the portion of the total delay attributed to signal operations, and includes initial deceleration, queue move up time, stopped delay and acceleration delay. Using this method, transportation engineers and planners base the level of service for a signalized intersection on the control delay per vehicle measured in seconds. Table 4.4-1
shows the relationship between delay and level of service for signalized intersections.

2. Unsignalized Intersections
Unsignalized intersection (i.e. all-way stop-controlled and side-street stop-controlled) evaluations employ the HCM – Special Report 209 (Chapter 17) method. The average control delay per vehicle (measured in seconds) for each stop-controlled movement defines the operations for these intersections. Control delay incorporates delay associated with deceleration, acceleration, stopping and moving up in the queue. For side-street stop-controlled intersections, the delay reported in this study represents the worst-case minor-street movement. For all-way stop-controlled intersections, the average control delay represents the whole intersection. Table 4.4-1 summarizes the relationship between delay and level of service for unsignalized intersections.

a. Traffic Signal Warrant
To determine whether signals should be installed at any one location, signal warrants are typically reviewed. This consists of reviewing traffic levels, proximity of the intersection to other signals and to schools, accident frequency, and other factors against a set of warrants identified in the Traffic Manual (Caltrans 1995) and the Manual on Uniform Traffic Control Devices (FHWA 2003) to identify whether installing a traffic signal would be appropriate.

Warrants for traffic signal installation at unsignalized intersections were evaluated based on the peak-hour volume warrant contained in the Traffic Manual. The peak-hour warrant is a subset of the standard traffic-signal warrants recommended in the Manual on Uniform Traffic Control Devices and associated Caltrans guidelines. The peak-hour signal warrant analysis should not serve as the only basis for deciding whether and when to install a signal. To reach such a decision, the full set of warrants should be investigated based on field-measured, rather than forecasted, traffic data, and on a thorough study of traffic and roadway conditions conducted by an experienced
### Table 4.4-1 INTERSECTION LEVEL OF SERVICE CRITERIA

<table>
<thead>
<tr>
<th>Level of Service</th>
<th>Driver’s Perception and Traffic Operation Description</th>
<th>Signalized Intersection Control Delay per Vehicle (Seconds)</th>
<th>Unsignalized Intersection Control Delay per Vehicle (Seconds)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>LOS A is characterized by light congestion. Motorists are generally able to maintain desired speeds on two and four lane roads and make lane changes on four lane roads. Motorists are still able to pass through traffic.</td>
<td>≤ 10.0</td>
<td>≤ 10.0</td>
</tr>
<tr>
<td>B</td>
<td>LOS B is characterized by light congestion. Motorists are generally able to maintain desired speeds on two and four lane roads and make lane changes on four lane roads. Motorists are still able to pass through traffic.</td>
<td>&gt; 10.0 and ≤ 20.0</td>
<td>&gt; 10.0 and ≤ 15.0</td>
</tr>
<tr>
<td>C</td>
<td>LOS C represents moderate traffic congestion. Average vehicle speeds continue to be near the motorist’s desired speed for two and four lane roads. Lane change maneuvers on four lane roads increase to maintain desired speed. Turning traffic and slow vehicles begin to have an adverse impact on traffic flows. Occasionally, motorists do not clear the intersection on the first green phase.</td>
<td>&gt; 20.0 and ≤ 35.0</td>
<td>&gt; 15.0 and ≤ 25.0</td>
</tr>
<tr>
<td>D</td>
<td>LOS D is characterized by congestion with average vehicle speeds decreasing below the motorist’s desired level for two and four lane roads. Lane change maneuvers on four lane roads are difficult to make and adversely affect traffic flow like turning traffic and slow vehicles. Multiple cars must wait through more than one green phase at a traffic signal. Stop-controlled approach motorists experience queuing due to a reduction in available gaps.</td>
<td>&gt; 35.0 and ≤ 55.0</td>
<td>&gt; 25.0 and ≤ 35.0</td>
</tr>
<tr>
<td>E</td>
<td>LOS E is the lowest grade possible without stop-and-go operations. Driving speeds are substantially reduced and brief periods of stop-and-go conditions can occur on two and four lane roads and lane changes are minimal. At signalized intersections, long vehicle queues can form waiting to be served by the signal’s green phase. Insufficient gaps on the major streets cause extensive queuing on the stop-controlled approaches.</td>
<td>&gt; 55.0 and ≤ 80.0</td>
<td>&gt; 35.0 and ≤ 50.0</td>
</tr>
<tr>
<td>F</td>
<td>LOS F represents stop-and-go conditions for two and four lane roads. Traffic flow is constrained and lane changes minimal. Drivers at signalized intersections may wait several green phases prior to being served. Motorists on stop-controlled approaches experience insufficient gaps of suitable size to cross safely through a major traffic stream.</td>
<td>&gt; 80.0</td>
<td>&gt; 50.0</td>
</tr>
</tbody>
</table>

engineer. Furthermore, the decision to install a signal should not be based solely upon the warrants, because the installation of signals can lead to certain types of collisions (such as rear-end collisions) and an increase in delays experienced by many drivers.

C. Existing Conditions

Section 4.4.1 of the 2007 Napa County General Plan Draft EIR contains a detailed description of the existing transportation conditions in the project area (Figure 4.4-1). It provides information pertaining to modes of transportation, the roadway system and classification, existing roadway capacity and levels of service, traffic estimates, public transit services, waterway transportation, the Napa Valley Wine Train and non-motorized transportation. Key aspects of the system within the study area are discussed in this section.

1. Affected Environment
   a. Roadway System
      i. Freeways
      Freeways are four- to eight-through-lane roadways characterized by limited access and designed for high speed travel (up to 70 miles per hour [mph]). Only one freeway provides regional access to the project area, as discussed below. Highway 29 is configured as a freeway through a portion of Napa County, but is largely a rural throughway.

      Interstate 80 is a major eight-lane freeway located southeast of the project area. Although Interstate 80 is a major regional freeway, only a small segment of the freeway passes through the southeast corner of Napa County. This freeway connects Napa County with the San Francisco Bay Area to the south and Sacramento to the north and east.

      ii. Rural Throughways
      Rural throughways are two- to four-through-lane roadways designed primarily for longer-distance travel between major centers of activity and built to accommodate this type of travel. Highway 29 is a two- to four-lane rural...
FIGURE 4.4-1

STUDY INTERSECTIONS AND HOUSING SITE LOCATIONS

NAPA COUNTY HOUSING ELEMENT UPDATE
DRAFT EIR

Source: Fehr & Peers Transportation Consultants, 2008

Legend:

1 = Study Intersections

= Housing Sites and Geographically-Defined Program Areas

Not to Scale
throughway that stretches through Napa County in a north-south direction. To the south, in the City of Napa, Highway 29 is a freeway approximately between Highway 121 West to just north of Trancas Street. Within the Cities of St. Helena and Calistoga, this roadway is known as Main Street; it has intermittent sidewalks, on-street parking, transit service and no bicycle lanes. The posted speed limit ranges between 30 and 60 mph.

Highway 128, also known as Rutherford Road/Conn Creek Road, is a two-lane road that extends east-west connecting Saint Helena Highway (Highway 29) to Silverado Trail. East of Silverado Trail, Highway 128 winds through the hills into Yolo County.

Highway 12/Jameson Canyon Road is a two-lane, east-west rural throughway connecting to Sonoma County to the west and connecting Highway 29 in southern Napa County to Interstate 80 in Fairfield. Between Highway 29 and Interstate 80, the highway has an undivided two-lane cross section that passes mostly through undeveloped rural lands. At the Highway 29/Highway 12/Airport Boulevard intersection, Highway 12 joins with Highway 29 and continues north. Airport Boulevard provides the western leg of this intersection and provides access to the Napa County Airport and the adjacent industrial areas.

Highway 221 (Napa-Vallejo Highway) is a four-lane rural throughway that extends in a north-south direction approximately three miles, from Highway 29 to the south to Highway 121/Imola Avenue to the north. At Imola Avenue, in the City of Napa, Highway 221 becomes Soscol Avenue, which continues north through Napa. Highway 221 is divided by a landscaped median for most of its length, and is designed for relatively high-speed vehicle traffic, with posted speed limits ranging between 40 and 55 mph, wide shoulders, no on-street parking and no sidewalks.

iii. Rural Collectors
Rural collectors are two- to four-lane roadways designed primarily for travel within the county’s urbanized areas, including the airport area. They are in-
tended to link locally important activity centers and provide a collection system for the local roads. Rural collectors will typically be designed for slower travel speeds than rural throughways, and may incorporate sharper curves, narrower pavement widths, and other features consistent with slower vehicle speeds.

Soscol Avenue is one of the primary thoroughfares in the City of Napa, running in a north-south direction from Trancas Street to Imola Avenue. It runs along the eastern edge of downtown, where it crosses the Napa River, and then meets with Silverado Trail. South of Imola Avenue, this road becomes Highway 221 (Napa-Vallejo Highway). Soscol Avenue has two travel lanes in each direction, with sidewalks and Class II bicycle facilities along its entire length, and is serviced by six VINE bus routes. The posted speed limit is 40 mph.

Silverado Trail is a north-south road that extends between Soscol Avenue (in the City of Napa) to the south and Lake County Highway (in the City of Calistoga) to the north. The roadway has two travel lanes for its entirety with turn lanes at select locations. The posted speed limit varies from 35 to 55 mph. Between Soscol Avenue and Trancas Avenue, Silverado Trail is also Highway 121 and does not provide bicycle lanes or sidewalks.

Highway 121 is an east-west rural collector that extends between Highway 128 and Sonoma County. The roadway is called Imola Avenue between Highway 29 and Highway 221/Napa Vallejo Highway/Soscol Avenue. Imola Avenue has four lanes, with sidewalks and Class II bicycle facilities on some segments. The posted speed limit on Imola Avenue is 35 mph. The City of Napa characterizes this roadway as a “crucial corridor,” which are defined as major corridors that provide community-wide circulation. The City of Napa policy for this type of facility is to limit development with direct access to these streets to uses generating less than 520 trips per day per acre.
Airport Boulevard is a short east-west road that extends from the Napa County Airport to Highway 29. East of Highway 29, this road becomes Jameson Canyon Road/Highway 12, extending eastward to Interstate 80. Airport Boulevard has two travel lanes in each direction, with Class II bicycle facilities on both sides of the road. There are no sidewalks and on-street parking is not allowed. The posted speed limit is 45 mph.

Deer Park Road is a two-lane roadway that extends in an east-west direction from Main Street (Highway 29) in St. Helena to White Cottage Road South and Howell Mountain Road, between Highway 29 and Angwin. Between Highway 29 and Silverado Trail, Deer Park Road serves as one of a number of “cross-valley” roadways connecting the two north-south rural throughways described above. This portion of Deer Park Road includes two 12-foot travel lanes accompanied by wide shoulders. East of Silverado Trail, Deer Park Road begins a relatively steep uphill grade into the foothills east of the Napa Valley. East of Sanitarium Road South (just past Silverado Trail), the road narrows and no longer provides shoulders. Between Sanitarium Road South and Howell Mountain Road, the speed limit is 45 mph, although there are a number of horizontal curves along this section of the roadway with advisory speeds ranging from 15 to 35 mph. There are no sidewalks provided along Deer Park Road, although crosswalks and an advance warning sign are provided at Sunnyside Road, near the Foothills Adventist Elementary School. At the “four corners” intersection, where Deer Park Road, Howell Mountain Road, and White Cottage Road South intersect, Deer Park Road ends and becomes Howell Mountain Road.

Howell Mountain Road extends in an east-west direction from Silverado Trail to Pope Valley Road, north of Angwin. The section between Silverado Trail and Deer Park Road is called “Old Howell Mountain Road,” and is discussed later in this section. East of the “four corners” intersection, Deer Park Road ends and becomes Howell Mountain Road. Between Deer Park Road and Angwin, Howell Mountain Road continues on an uphill grade and generally provides two 12-foot travel lanes with limited shoulders, except at specific locations along the road where unpaved “turnout” areas are provided. Within
Angwin, Howell Mountain Road becomes relatively flat with few curves. The roadway widens to provide space for on-street parking on the east side of the street, adjacent to Pacific Union College (PUC), a small liberal arts college located in Angwin. The speed limit on Howell Mountain Road is 45 mph from the “four corners” intersection until it approaches Angwin, where the speed limit decreases to 35 mph, and eventually changes to 25 mph within Angwin. The 25 mph speed limit remains from Angwin to Pope Valley Road. Similar to Deer Park Road, despite the posted speed limit, there are a number of curves in the road with advisory speeds ranging from 15 mph to 30 mph. Sidewalks are provided on the east side of Howell Mountain Road within Angwin (adjacent to the PUC campus) and on the west side adjacent to the Angwin Plaza shopping center (from Angwin Avenue to Brookside Drive). Within Angwin, crosswalks are provided at Cold Springs Road, Angwin Lane and Brookside Park.

Pope Valley Road is a two-lane roadway that extends in a north-south direction from Howell Mountain Road to Aetna Springs Road. At Aetna Springs Road, this roadway turns into Butts Canyon Road, which leads directly to the community of Middletown. South of Howell Mountain Road, Pope Valley Road becomes Chiles Pope Valley Road. Pope Valley Road does not have on-street parking, sidewalks or bicycle facilities, and it is not served by transit.

iv. Local Roadways
Local roadways are roadways which provide access to individual homes and businesses.

1st Street is a cross-town road in the City of Napa that connects Highway 29 with the city’s downtown district. Generally, 1st Street is a one-way street westbound between Main Street and Highway 29. East of Main Street, 1st Street accommodates two-way travel, with a single lane in each direction and bicycle lanes. West of Highway 29, 1st Street becomes Browns Valley Road.

Kaiser Road connects Highway 221 (Napa-Vallejo Highway) to the Napa Pipe sites. Between Highway 221 (Napa-Vallejo Highway) and Syar Industrial Way, Kaiser Road travels in an east-west direction and provides four
lanes and center left-turn lanes. This section of Kaiser Road provides access to a number of light industrial and office uses. At Syar Industrial Way, Kaiser Road turns to travel in a north-south direction between Syar Industrial Way and the entrance to the Napa Pipe sites. This north-south section provides only two lanes with no other adjacent uses.

Cold Springs Road is a two-lane residential roadway that runs in a northwest-southeast direction in the town of Angwin. It extends eastward from Howell Mountain Road, south of the PUC campus, terminating approximately one mile from its intersection with Howell Mountain Road. This roadway has intermittent sidewalks and on-street parking, and has no bicycle facilities or transit service. The posted speed limit is 25 mph.

College Avenue is a two-lane roadway that bisects the Angwin community in an east-west direction. This roadway’s eastern half connects PUC with Howell Mountain Road. College Avenue has intermittent sidewalks, with no on-street parking, bicycle facilities or transit service. The posted speed limit is 25 mph.

b. Bicycle Network
The Circulation Element of the Napa County General Plan defines the following bicycle facilities:

− **Class I Bike Paths** are facilities specifically designated for the exclusive use of bicycles and pedestrians. Class I bike paths are separate from streets, although they may cross roadways.

− **Class II Bike Lanes** are striped lanes on a street or highway, designated for use by bicycles. Vehicle parking and vehicle pedestrian cross-flows are permitted at designated locations.

− **Class III Bike Routes** are usually designated by pavement markings to indicate the use of bicycles within the vehicular travel lane of a roadway.

Although the vast majority of travel in Napa County is by automobile; Napa County does contain Class I, II, and III bike facilities. One major bike route is
a Class II facility (i.e. bike lanes), located on Silverado Trail connecting Napa to Calistoga. Another Class II facility extends along Highway 29 and connects Yountville to southern Napa.

There are several Class I mountain bike trails (e.g. Oat Hill Mine Road) that provide recreational access.

The Napa County Transportation and Planning Agency is responsible to implement the Napa County Bike Plan, the South County Bike Plan, and other bike and trail plans, with the goal of establishing a comprehensive and seamless network of non-motorized paths and trails connecting population centers to each other and to outdoor recreation opportunities.

c. Transit

Public transit services are available in all of the cities and in much of the unincorporated areas of Napa County. The primary transit service in Napa County is provided by the VINE, a fixed-route bus service providing service to the Cities of Calistoga, St. Helena, Napa and American Canyon, the Town of Yountville and other parts of unincorporated Napa County. In general, VINE operates on weekdays from 5:20 a.m. to 9:25 p.m., on Saturdays from 6:30 a.m. to 8:40 p.m., and on Sundays from 8:30 a.m. to 7:00 p.m. with service for all the lines about once an hour. Route 11 runs from St. Helena to Santa Rosa on Monday, Tuesday, Wednesday and Saturday three times a day. Key VINE routes are presented in Figure 4.4-2.

Fixed-route, local, intercity, demand-response and paratransit services are also provided through the following:

American Canyon Transit (ACT) provides primarily a fixed-route service in American Canyon; however, the route can deviate upon special request, for door-to-door service for seniors and disabled individuals. The routes are run Monday through Friday, every hour and a half between 7:30 am and 6:00 p.m. There are bike racks on ACT.
LEGEND:

- Route 1A, 1B
- Route 10
- Route 11

Source: Fehr & Peers Transportation Consultants, 2008

FIGURE 4.4-2

REGIONAL VINE TRANSIT LINES
♦ **Yountville Shuttle** provides a free fixed-route service throughout Yountville, with a stop at the Veterans Hospital. Door-to-door service is also available for a small charge. The shuttles run about every half hour between 10:00 a.m. and 7:00 p.m. with service upon request from 7:00 p.m. to 11:00 p.m. Yountville shuttle does not provide service on Mondays. There are bike racks located on the front of the buses and interior shelving for grocery bags or other carry-on items.

♦ **St. Helena Shuttle** is a fixed-route service in St. Helena and includes service to St. Helena Hospital. Door-to-door service is provided for a slightly higher rate. The shuttle runs Monday through Friday on approximately an hourly schedule, between the hours of 8:00 a.m. and 5:00 p.m.

♦ **Calistoga Handy Van** is a general public dial-a-ride service in Calistoga, and no advanced reservations are required. There is no service on Sundays.

♦ **VINE GO** provides curb-to-curb paratransit service for ADA and Senior residents countywide. Trips must be scheduled at least a day in advance.

♦ **Downtown Napa Trolley** provides free shuttle service in downtown Napa.

♦ Private taxi, tour bus, shuttle, and limousine services.

d. **Rail**

Rail transportation in Napa County is limited to commercial and freight services. No commuter rail service exists within the county at this time. The Napa Valley Wine Train is a tourist service between Napa and St. Helena, but does not provide transit service.

Freight service is limited, but is planned to be reestablished on a line extending from American Canyon to Schellville, in Sonoma County. This freight line has a spur which extends north to the county’s industrial area and the City of Napa.
e. Air
Air transportation in Napa County is principally provided by Napa County Airport and Angwin-Parrett Field Airport. Located 6.5 miles south of the City of Napa in the unincorporated area, Napa County Airport is a general aviation airport operated by the County of Napa. Angwin Airport is privately owned and operated. It also offers ground schools and flight instruction to individuals in the community. The Lake Berryessa Seaplane Base has an emergency seaplane landing area that is also open to the public for recreational use. In addition, Wine Country Helicopters are used for tourist and commercial services, such as aerial photography.

f. Water
Some visitors come to Napa County by water. Boats can travel from the San Francisco Bay up the Napa River as far as the First Street Bridge in the City of Napa. However, waterways are not a major mode of transportation in Napa County.

2. Geographically-Defined Program Area and Housing Site Conditions
This section discusses the transportation conditions around the Monticello Road Rural Residential program area, which has a geographically-defined area, as well as around each of the four potential housing sites considered in this analysis.

a. Monticello Road Rural Residential Area
i. Transit
Currently, there are no transit lines that serve the Monticello Road Rural Residential area. The area consists of a primarily rural setting, with downtown Napa approximately 6 miles away. The nearest transit lines are in Napa, and they include Route 3A, 3B Alta Heights/Pueblo Vista and Route 10 Calistoga/Vallejo.

ii. Pedestrian and Bike Facilities
Pedestrian and bicycle facilities in the Monticello Road Rural Residential area are limited.
b. Angwin  
   i. Transit  
   Currently, there are no transit lines that serve the Angwin sites. The closest transit route is the VINE Route 10, which stops at Napa Valley College (Upper Valley Campus) in St. Helena, approximately 5 miles from the housing sites.  

   ii. Pedestrian and Bike Facilities  
   Pedestrian and bicycle facilities adjacent to the Angwin sites are limited, given the existing agricultural and open space uses. There are sidewalks along a portion of Howell Mountain Road and College Avenue immediately adjacent to the housing sites. Despite limited facilities, Deer Park Road and Howell Mountain Road do experience recreational bicycle traffic, with slightly higher bicycle volumes on weekends. A November 2007 survey conducted by the Napa County Road Department counted a weekday average of approximately 20 bicycles on Deer Park Road, just east of Sunnyside Road in the Deer Park Community. On the Saturday of the survey, over 30 bicycles were counted. Anecdotally, the volume of cyclists using the roadway during the warmer summer months is higher still.  

c. Moskowite Corner  
   i. Transit  
   Currently, there are no transit lines that serve the Moskowite Corner sites. The housing sites are in a primarily rural setting located near a mobile home park.  

   ii. Pedestrian and Bike Facilities  
   Pedestrian and bicycle facilities adjacent to the proposed housing sites are limited, given the existing rural setting of the area.
d. Spanish Flat
   i. Transit
   Currently, there are no transit lines that serve the Spanish Flat sites. The
   housing sites are in a primarily rural setting with small residential enclaves.

   ii. Pedestrian and Bike Facilities
   Pedestrian and bicycle facilities adjacent to the proposed housing sites are lim-
   ited, given the existing rural setting of the area.

e. Napa Pipe
   i. Transit
   VINE Route 10 provides service along Highway 221 near the Napa Pipe sites,
   ultimately traveling from the City of Vallejo to the City of Calistoga. Stops
   are located on Kaiser Road between Napa Valley Corporate Drive and High-
   way 221 (Napa Vallejo Highway) and at the intersection of Napa Valley Cor-
   porate Drive and Latour Court, slightly longer than a 1/2-mile walk from the
   Napa Pipe sites. Route 10 connects to the Vallejo Transit system at the York
   Transit Center in Vallejo, which provides transportation to the East Bay and
   San Francisco. Route 5 provides service on Jefferson Street and Imola Avenue
   from the Pearl Street Transit Center. The nearest bus stop is located on
   James Deimer Drive, which on the Napa Valley College campus, less than 2
   miles from the housing sites. Route 2 provides service along Imola Avenue
   and Coombs Street from the Pearl Street Transit Center to the Kansas Ave-
   nue/Wilkins Avenue intersection. Service frequency for all nearby VINE
   routes is approximately once per hour.

   ii. Pedestrian and Bike Facilities
   Sidewalks and Class II bicycle lanes are provided along Napa Valley Corpo-
   rate Drive, just east of the Napa Pipe sites, and bicycle lanes are provided
   along Kaiser Road between Highway 221 (Napa-Vallejo Highway) and Napa
   Valley Corporate Drive. Highway 221 does not provide bicycle lanes, al-
   though wide shoulders separated from travel lanes with a traffic stripe can
   accommodate bicycle travel. There are many recreational trails throughout
   the county, some of which are located within the vicinity of the Napa Pipe.
   The River to Ridge Trail begins at the Napa River near Kennedy Park and
continues into Skyline Park. The gate entrance into Skyline Park is at the traffic light on Highway 221. It is opened to hikers, horses and mountain bikes. Parking for this trail is at Kennedy Park; there is no parking at the highway entrance. There are also various recreational trails within Kennedy Park. ABAG has a proposed alignment for the Bay Trail that extends south from the City of Napa, along the Napa Pipe project frontage, and through the cities of American Canyon and Vallejo.

3. Operations Analysis

Detailed traffic analyses were performed for 15 intersections in the vicinity of the Monticello Road Rural Residential program area and the four housing sites. These intersections were selected in consultation with Napa County staff because they are representative of the County’s road network, and are the most likely to experience changes as a result of the development anticipated under the Housing Element. Study intersections include the following:

1. College Road/Howell Mountain Road
2. Cold Springs Road/Howell Mountain Road
3. Deer Park Road/Silverado Trail
4. St. Helena Highway (State Route 29)/Rutherford Road (State Route 128)
5. Spanish Flat Loop Road/Berryessa Knoxville Road
6. Capell Valley Road (State Route 128)/Monticello Road (State Route 121)
7. Atlas Peak Road/Monticello Road (State Route 121)
8. Trancas Street/Monticello Road (State Route 121)/Silverado Trail (State Route 121)
9. 1st Street/Silverado Trail (State Route 121)
10. 1st Street/Soscol Avenue
11. Soscol Avenue/Silverado Trail (State Route 121)
12. Imola Avenue (State Route 121)/Soscol Avenue (State Route 121/221)
13. Carneros Highway (State Route 121)/Sonoma Highway (State Route 12)/Highway 29
14. Sonoma Highway (State Route 12)/Highway 29/Napa Vallejo Highway (State Route 221)
15. Jameson Canyon Road (State Route 12)/State Route 29
Intersection turning movement counts were collected midweek during the morning (7:00 to 9:00 a.m.) and evening (4:00 to 6:00 p.m.) peak periods.

The analysis focuses on the one hour within each two-hour period that has the highest traffic volumes. Typically in this area, the peak hours are 7:15 to 8:15 a.m. and 4:30 to 5:30 p.m. Intersection lane configurations and traffic control devices are presented in Figure 4.4-3A and Figure 4.4-3B. Existing AM and PM peak hour intersection turning movement volumes are presented in Figure 4.4-4A and Figure 4.4-4B. Existing intersection operations were analyzed using Trafficware’s Synchro analysis platform. This program is consistent with the HCM methodology presented in Section B of this chapter. The results of the HCM analysis are presented in Table 4.4-2. Detailed level of service calculations are available at the Napa County Department of Conservation, Development and Planning, 1195 Third Street, Suite 210, Napa, California 94559.

As shown in Table 4.4-2, three study intersections are operating unacceptably during both the AM and PM peak hours:

4. St. Helena Highway (State Route 29)/Rutherford Road (State Route 128).

   This is a stop-controlled intersection. It meets the MUTCD Peak Hour Signal Warrant for signal installation under current conditions. Intersection improvements are planned for this location in the future, possibly including a roundabout, but have not been designed or fully funded.

---

Intersection counts were collected from various studies being conducted in the county where available. Counts were collected at various times around the county. Intersections 1 through 3 were collected during the week of November 27, 2006 (Triad Ecovillage Existing Conditions, ARUP); Intersections 4 through 8 were collected September 16, 2008 as part of this study; Intersections 9 and 10 were collected April 18, 2007 (Napa Pipe Draft Transportation Impact Analysis (TIA)); Intersections 11 through 14 were collected May 11, 2006 (Napa Pipe Draft TIA); and Intersection 15 was collected in June of 2006 (Napa Pipe Draft TIA). Additional information about methodology and intersection counts for data that were collected from other studies is available at the Napa County Department of Conservation, Development and Planning, 1195 Third Street, Suite 210, Napa, California 94559.
EXISTING LANE CONFIGURATIONS AND TRAFFIC CONTROLS

NAPA COUNTY HOUSING ELEMENT UPDATE

DRAFT EIR

FIGURE 4.4-3A

LEGEND:

1 = Study
   Intersections
9 = See Figure 3B

= Traffic Signal
= Stop Sign

Source: Fehr & Peers Transportation Consultants, 2008
EXISTING LANE CONFIGURATIONS AND TRAFFIC CONTROLS

NAPA COUNTY HOUSING ELEMENT UPDATE

DRAFT EIR

FIGURE 4.4-3B

LEGEND:

9 = Study Intersections
1 = See Figure 3A
= Traffic Signal

Source: Fehr & Peers Transportation Consultants, 2008
EXISTING CONDITIONS
PEAK HOUR TRAFFIC VOLUMES

Source: Fehr & Peers Transportation Consultants, 2008
FIGURE 4.4-4B

EXISTING CONDITIONS
PEAK HOUR TRAFFIC VOLUMES

NAPA COUNTY HOUSING ELEMENT UPDATE
DRAFT EIR

Source: Fehr & Peers Transportation Consultants, 2008

Legend:
1 = Study Intersections
9 = See Figure 4A
XX (YY) = AM (PM)

Not to Scale
## Table 4.4-2 Existing Intersection Level of Service

<table>
<thead>
<tr>
<th>Intersection</th>
<th>Traffic Control</th>
<th>AM Peak Hour</th>
<th>PM Peak Hour</th>
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</thead>
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<td></td>
<td></td>
<td>Delay&lt;sup&gt;b&lt;/sup&gt;</td>
<td>V/C&lt;sup&gt;b&lt;/sup&gt;</td>
</tr>
<tr>
<td>1. College Road/Howell Mountain Road</td>
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<td>9</td>
<td>- A</td>
</tr>
<tr>
<td>2. Cold Springs Road/Howell Mountain Road</td>
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<td>- C</td>
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<td>(SR 128)</td>
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<td></td>
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<td>5. Spanish Flat Loop Road/Berryessa Knoxville Road</td>
<td>SSS</td>
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<td>- A</td>
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<td>6. Capell Valley Road (SR 128)/Monticello Road</td>
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<td>10</td>
<td>- A</td>
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<td>(SR 121)</td>
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<td></td>
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<td>7. Atlas Peak Road/Monticello Road (SR 121)</td>
<td>Signal</td>
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<td>- B</td>
</tr>
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<td>Silverado Trail (SR 121)</td>
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<td>9. 1st Street/Silverado Trail (SR 121)</td>
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<td>- B</td>
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<td>10. 1st Street/Soscol Avenue</td>
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<td>16</td>
<td>- B</td>
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<td>11. Soscol Avenue/Silverado Trail (SR 121)</td>
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<td>(SR 121/221)</td>
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<td>13. Carneros Highway (SR 121)/Sonoma Highway</td>
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<td>- D</td>
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<td>(SR 12)/SR29</td>
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</tr>
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<td>14. Sonoma Highway (SR 12)/State Route 29/Napa</td>
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<td>1.14 F</td>
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<td>Vallejo Highway (SR 221)</td>
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</tr>
<tr>
<td>15. Jameson Canyon Road (SR 12)/State Route 29</td>
<td>Signal</td>
<td>&gt;80</td>
<td>1.09 F</td>
</tr>
</tbody>
</table>

**Note:** Delay reported in seconds per vehicle; LOS = Level of Service

**Bold** = unacceptable operations

Signal = Signalized intersection; AWS = All-Way Stop-Controlled intersection; SSS = Side-Street Stop-Controlled intersection

<sup>a</sup> Signalized and AWS intersection level of service based on average control delay per vehicle, according to the Highway Capacity Manual - Special Report 209 (Transportation Research Board, 2000). Side-street stop-controlled intersection level of service based on worst control delay, according to the HCM - Special Report 209 (Transportation Research Board, 2000).

<sup>b</sup> Delay per vehicle reported for intersections operating at an acceptable LOS D or better. Volume-to-capacity (V/C) ratio reported for intersections operating at an unacceptable LOS E or worse.

12. Imola Avenue (State Route 121)/Soscol Avenue (State Route 121/221)
14. Sonoma Highway (State Route 12)/Highway 29/Napa Vallejo Highway (State Route 221). Construction of a “flyover” ramp is planned for this location in the future, but has not been fully funded.

One intersection operates unacceptably during the AM peak hour only:
15. Jameson Canyon Road (State Route 12)/State Route 29. Construction of an interchange is planned for this location in the future, but has not been fully funded.

The remaining study intersections are currently operating at LOS D or better.

D. Year 2015 No Project Conditions

This section describes what future projected traffic conditions are expected to be in the Year 2015 without the project. Year 2015 was selected as the future analysis horizon because the Housing Element Update would be fully implemented, and proposed housing units would be completed and occupied by this time.

In order to predict Year 2015 conditions, traffic engineers first projected traffic forecasts for Year 2030 (Year 2030 is the only future year scenario projected by the model), using the most recent NCTPA Napa/Solano County Travel Demand Forecasting (TDF) Model and previously-prepared transportation impact analyses, in conjunction with knowledge of the study area, 2007 ABAG projections, and engineering judgment. A description of the model validation effort employed for the Napa Pipe study can be found in Appendix A. The 2030 model contains foreseeable development and fully funded and programmed roadways, but does not necessarily include all of the proposed residential developments that are contained in the Housing Element Update. (Year 2030 forecast development is discussed in more detail in Section H, below.) These forecasts were then linearly interpolated to Year 2015 conditions to develop weekday AM and PM peak hour traffic volumes for the study in-
intersections. These forecasts are presented on Figures 4.4-5A and 4.4-5B. Table 4.4-3 presents the projected level of service and delay per vehicle for the Year 2015 No Project conditions.

While the same intersections that are operating at LOS E and F under existing conditions would continue to operate below the LOS D threshold under Year 2015 No Project conditions, three additional intersections would deteriorate to unacceptable operations by 2015, without the development foreseen in the Housing Element:

3. Deer Park Road/Silverado Trail would operate at an unacceptable LOS F during the AM peak hour.
8. Trancas Street/Monticello Road (State Route 121)/Silverado Trail (State Route 121) would operate at an unacceptable LOS E during the AM peak hour.
13. Carneros Highway (State Route 121)/Sonoma Highway (State Route 12)/Highway 29 would operate at an unacceptable LOS F during both the AM and PM peak hours.

The Deer Park Road/Silverado Trail intersection is a stop-controlled intersection. It would meet the MUTCD Peak Hour Signal Warrant for signal installation under 2015 No Project Conditions.

E. Standards of Significance

A transportation or circulation impact is considered significant if implementation of the Housing Element Update would result in any of the following:

1. Increase in traffic, which is substantial in relation to the existing traffic load and capacity of the street system, exceeding a level of service standard as follows:
   a. If a study intersection is projected to operate at LOS D or better with implementation of the Housing Element Update, the impacts are considered less than significant.
FIGURE 4.4-5A

YEAR 2015 NO PROJECT CONDITIONS
PEAK HOUR TRAFFIC VOLUMES

NAPA COUNTY HOUSING ELEMENT UPDATE
DRAFT EIR

LEGEND:
1 = Study Intersections
9 = See Figure 5B
XX (YY) = AM (PM)

Source: Fehr & Peers Transportation Consultants, 2008
### Year 2015 No Project Intersection Level of Service

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<th>Intersection</th>
<th>Traffic Control</th>
<th>AM Peak Hour</th>
<th>PM Peak Hour</th>
<th>AM Peak Hour</th>
<th>PM Peak Hour</th>
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</thead>
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<tr>
<td></td>
<td>Delay V/Cb LOS</td>
<td>Delay V/Cb LOS</td>
<td>Delay V/Cb LOS</td>
<td>Delay V/Cb LOS</td>
<td>Delay V/Cb LOS</td>
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<tr>
<td>1. College Road/Howell Mountain Road</td>
<td>AWS 9 - A 11 - B 10 - B</td>
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<td>2. Cold Springs Road/Howell Mountain Road</td>
<td>SSS 14 - B 16 - C 12 - B</td>
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<td></td>
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<tr>
<td>3. Deer Park Road/Silverado Trail</td>
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<td>4. St. Helena Highway (SR 29)/Rutherford Road (SR 128)</td>
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<td>6. Capell Valley Road (SR 128)/Monticello Road (SR 121)</td>
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<td>7. Atlas Peak Road/Monticello Road (SR 121)</td>
<td>Signal 13 - B 14 - C 8 - A</td>
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<td>8. Transac St./Monticello Rd. (SR 121)/Silverado Trail (SR 121)</td>
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<td>9. 1st Street/Silverado Trail (SR 121)</td>
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<td>10. 1st Street/Soscol Avenue</td>
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<td>11. Soscol Avenue/Silverado Trail (SR 121)</td>
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<tr>
<td>12. Imola Avenue (SR 121)/Soscol Avenue (SR 121/221)</td>
<td>Signal &gt;80 1.36 F &gt;80 1.31 F &gt;80 1.58 F &gt;80 1.44 F</td>
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<td>13. Carneros Highway (SR 121)/Sonoma Highway (SR 12)/State Route 29</td>
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<tr>
<td>14. Sonoma Highway (SR 12)/State Route 29/Napa Vallejo Highway (SR 221)</td>
<td>Signal &gt;80 1.14 F &gt;80 1.38 F &gt;80 1.44 F</td>
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<td></td>
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<tr>
<td>15. Jameson Canyon Road (SR 12)/State Route 29</td>
<td>Signal &gt;80 1.09 F &gt;80 1.26 F</td>
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</table>

Note: Delay reported in seconds per vehicle; LOS = Level of Service

**Bold** = unacceptable operations

Signal = Signalized intersection; AWS = All-Way Stop-Controlled intersection; SSS = Side-Street Stop-Controlled intersection

* Signalized and AWS intersection level of service based on average control delay per vehicle, according to the Highway Capacity Manual - Special Report 209 (Transportation Research Board, 2000). Side-street stop-controlled intersection level of service based on worst control delay, according to the HCM - Special Report 209 (Transportation Research Board, 2000).
* Delay per vehicle reported for intersections operating at an acceptable LOS D or better. Volume-to-capacity (V/C) ratio reported for intersections operating at an unacceptable LOS E or worse.

b. For study intersections that currently operate at LOS D or better, if the Housing Element Update results in or contributes to future LOS E or F conditions, the impacts are considered significant even if LOS E or F would occur in the future without the Housing Element Update.

c. For study intersections that currently operate at LOS E or F, if the Housing Element Update would cause an increase in traffic or change in other conditions such that the volume-to-capacity ratio would increase by 5 percent or more, the impacts are considered significant.2

2 The 5 percent change in volume-to-capacity ratio is based upon professional judgment and observation. Changes of 5 percent are generally noticed by drivers in the stream of traffic.

2. Substantial increase in hazards due to a design feature (e.g. sharp curves or dangerous intersections) or incompatible uses (e.g. farm equipment), as well as potential adverse effects on emergency access needs.

3. Conflict with adopted policies, plans or programs supporting alternative transportation (e.g. bus turnouts, bicycle racks, pedestrian facilities).

4. Inadequate parking capacity.

F. Impact Analysis Methodology

This section provides an overview of the project components and describes the project’s trip generation, distribution and assignment characteristics. This allows for an evaluation of project impacts on the surrounding transportation network.

1. Project Description

The proposed General Plan Housing Element update could result in the construction of 1,398 housing units by 2015 if all housing sites are built upon; 153 units could be developed through the implementation of the housing programs, and 1,245 units could be developed on designated housing sites located...
throughout the county. These designated housing sites would include the following:

- Angwin: 191 dwelling units
- Moskowite Corner: 105 dwelling units
- Spanish Flat: 99 dwelling units
- Napa Pipe: 850 dwelling units

The 153 units expected to be developed through the implementation of the housing programs would be dispersed throughout the county and would have minimal localized effect on specific facilities in the county’s transportation system. Therefore, the project analysis for this section focuses on the impact of developing the four housing sites, as well as a concentrated development of housing at the Monticello Road Rural Residential program area (approximately 13 dwelling units).

### 2. Trip Generation

The amount of traffic projected to enter and exit the housing sites is referred to as the project’s trip generation. Trip generation rates published in *Trip Generation* (7th Edition; Institute of Transportation Engineers, 2003) were used to calculate AM and PM peak hour trips for the housing sites. Because development on particular sites under the proposed Housing Element would be residential and there would be few services or employment uses within the sites, it was assumed that all trips would be new trips, and all trips would affect the roadway network outside of the sites. No trips would stay internal to the housing sites and no existing traffic would be attracted into the sites.

In addition, although it is possible that some of the housing units included in this Housing Element Update would be multi-family units or townhomes, all units were treated as single-family detached units, which have the highest traffic generation rate of all housing types. This results in a conservative analysis of traffic generation. The calculated trip generation is presented in Table 4.4-4. These peak hour trips were then assigned to the circulation network based on the distribution described below.
### TABLE 4.4-4  HOUSING SITE TRIP GENERATION

<table>
<thead>
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<th>Land Use</th>
<th>AM Peak Hour</th>
<th>PM Peak Hour</th>
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<tbody>
<tr>
<td></td>
<td>Size</td>
<td>In</td>
</tr>
<tr>
<td>Angwin</td>
<td></td>
<td></td>
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<tr>
<td>Single-Family Detached Housing</td>
<td>191 units</td>
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<td>Moskowite Corner</td>
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<td>Single-Family Detached Housing</td>
<td>105 units</td>
<td>21</td>
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<td>Spanish Flat</td>
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<td>Single-Family Detached Housing</td>
<td>99 units</td>
<td>20</td>
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<td>Napa Pipe</td>
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<td>Single-Family Detached Housing</td>
<td>850 units</td>
<td>151</td>
</tr>
<tr>
<td>Monticello Road Rural Residential Area</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single-Family Detached Housing</td>
<td>13 units</td>
<td>5</td>
</tr>
<tr>
<td><strong>Subtotal</strong></td>
<td></td>
<td>233</td>
</tr>
<tr>
<td><strong>Peak Hour Total</strong></td>
<td></td>
<td>928</td>
</tr>
</tbody>
</table>

Note: DU = Dwelling Units  
Source: *Trip Generation (7th Edition; Institute of Transportation Engineers, 2003)*.

3. **Trip Distribution and Assignment**  
The likely geographic distribution of origins and destinations for project-generated traffic was estimated using the Napa/Solano County Travel Demand Model and the 2000 Census Journey to Work and Place of Work data. The two data sources were generally consistent; however, the base year (Year 2000) Napa/Solano County Travel Demand Model provided more detail regarding the distribution of trips within the City of Napa and unincorporated.
Napa County, and therefore the model was used to estimate the trip distribution for the proposed project. The resultant traffic distribution percentages were developed separately for project-generated traffic associated with each residential housing site. Based on the general geographic distribution of project-generated traffic, the specific routes that traffic would use to travel between their origin/destination points and the project site were estimated.

G. Impact Discussion

1. Substantial Increase in Traffic
To analyze impacts from the proposed Housing Element, traffic that would be generated from units developed under the Housing Element was added to the 2015 No Project Conditions volumes at the 15 study intersections to form the AM and PM peak hour turning movement volumes for 2015 Plus Project conditions. The resulting volumes are presented in Figures 4.4-6A and 4.4-6B. The assumed roadway network and signal timings remained constant between the 2015 No Project and 2015 Plus Project scenarios. Intersection level of service and delay per vehicle are presented in Table 4.4-5; detailed peak hour intersection level of service calculations are available at the Napa County Department of Conservation, Development and Planning.

Per the standards of significance, traffic impacts are identified based on the projected level of service and volume to capacity ratio for each study intersection, as shown in Table 4.4-5. According to the County’s standards of significance, listed in Section E, above, all intersections should operate at a minimum acceptable level of service threshold of LOS D. As discussed in Section D, seven of the 15 study intersections are expected to operate worse than the minimum threshold of LOS D in Year 2015, even without the proposed Housing Element. The No Project conditions are presented for comparative purposes. Project impacts are determined by comparing Year 2015 conditions to existing conditions.
FIGURE 4.4-6A

YEAR 2015 PLUS PROJECT CONDITIONS
PEAK HOUR TRAFFIC VOLUMES

NAPA COUNTY HOUSING ELEMENT UPDATE
DRAFT EIR

Source: Fehr & Peers Transportation Consultants, 2008

LEGEND:
1 = Study Intersections
9 = See Figure 6B
XX (YY) = AM (PM)

Not to Scale
### TABLE 4.4-5  YEAR 2015 PLUS PROJECT INTERSECTION LEVEL OF SERVICE

<table>
<thead>
<tr>
<th>Intersection</th>
<th>Traffic Control</th>
<th>AM Peak Hour</th>
<th>PM Peak Hour</th>
<th>2015 No Project Conditions</th>
<th>AM Peak Hour</th>
<th>PM Peak Hour</th>
<th>2015 Plus Project Conditions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Existing Conditions</td>
<td></td>
<td>2015 No Project Conditions</td>
<td></td>
<td>2015 Plus Project Conditions</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>AM Peak Hour</td>
<td>PM Peak Hour</td>
<td>AM Peak Hour</td>
<td>PM Peak Hour</td>
<td>AM Peak Hour</td>
<td>PM Peak Hour</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Delay</td>
<td>V/C</td>
<td>LOS</td>
<td>Delay</td>
<td>V/C</td>
<td>LOS</td>
</tr>
<tr>
<td>3. Deer Park Road/Silverado Trail</td>
<td>AWS</td>
<td>24</td>
<td>-</td>
<td>C</td>
<td>16</td>
<td>-</td>
<td>C</td>
</tr>
<tr>
<td>4. St. Helena Highway (SR 29)/ Rutherford Rd. (SR 128)</td>
<td>SSS</td>
<td>&gt;50</td>
<td>0.32</td>
<td>F</td>
<td>&gt;50</td>
<td>0.96</td>
<td>F</td>
</tr>
<tr>
<td>5. Spanish Flat Loop Rd/Berryessa Knoxville Rd.</td>
<td>SSS</td>
<td>9</td>
<td>-</td>
<td>A</td>
<td>9</td>
<td>-</td>
<td>A</td>
</tr>
<tr>
<td>6. Capell Valley Road (SR 128)/Monticello Rd. (SR 121)</td>
<td>SSS</td>
<td>10</td>
<td>-</td>
<td>A</td>
<td>10</td>
<td>-</td>
<td>B</td>
</tr>
<tr>
<td>7. Atlas Peak Rd./Monticello Rd. (SR 121)</td>
<td>Signal</td>
<td>13</td>
<td>-</td>
<td>B</td>
<td>8</td>
<td>-</td>
<td>A</td>
</tr>
<tr>
<td>8. Trancas St./Monticello Rd. (SR 121)/ Silverado Trail (SR 121)</td>
<td>AWS</td>
<td>32</td>
<td>-</td>
<td>D</td>
<td>18</td>
<td>-</td>
<td>C</td>
</tr>
<tr>
<td>9. 1st Street/Silverado Trail (SR 121)</td>
<td>Signal</td>
<td>17</td>
<td>-</td>
<td>B</td>
<td>17</td>
<td>-</td>
<td>B</td>
</tr>
<tr>
<td>10. 1st Street/Soscol Avenue</td>
<td>Signal</td>
<td>16</td>
<td>-</td>
<td>B</td>
<td>19</td>
<td>-</td>
<td>B</td>
</tr>
<tr>
<td>11. Soscol Ave./Silverado Trail (SR 121)</td>
<td>Signal</td>
<td>22</td>
<td>-</td>
<td>C</td>
<td>20</td>
<td>-</td>
<td>B</td>
</tr>
<tr>
<td>12. Imola Ave. (SR 121)/Soscol Ave. (SR 121/221)</td>
<td>Signal</td>
<td>&gt;80</td>
<td>1.36</td>
<td>F</td>
<td>&gt;80</td>
<td>1.31</td>
<td>F</td>
</tr>
<tr>
<td>13. Carneros Highway (SR 121)/Sonoma Highway (SR 12)/SR 29</td>
<td>Signal</td>
<td>53</td>
<td>-</td>
<td>D</td>
<td>46</td>
<td>-</td>
<td>D</td>
</tr>
<tr>
<td>14. Sonoma Highway (SR 12)/State Route 29/Napa Vallejo Highway (SR 221)</td>
<td>Signal</td>
<td>&gt;80</td>
<td>1.14</td>
<td>F</td>
<td>&gt;80</td>
<td>1.31</td>
<td>F</td>
</tr>
<tr>
<td>15. Jameson Canyon Road (SR 12)/ State Route 29</td>
<td>Signal</td>
<td>&gt;80</td>
<td>1.09</td>
<td>F</td>
<td>37</td>
<td>-</td>
<td>D</td>
</tr>
</tbody>
</table>

Note: Delay reported in seconds per vehicle; LOS = Level of Service. **Bold** = unacceptable operations; **Shaded** = significant impact

Signal = Signalized intersection; AWS = All-Way Stop-Controlled intersection; SSS = Side-Street Stop-Controlled intersection

a  Signalized and AWS intersection level of service based on average control delay per vehicle, according to the Highway Capacity Manual - Special Report 209 (Transportation Research Board, 2000). Side-street stop-controlled intersection level of service based on worst control delay, according to the HCM - Special Report 209 (Transportation Research Board, 2000).

b Delay per vehicle reported for intersections operating at an acceptable LOS D or better. Volume-to-capacity (V/C) ratio reported for intersections operating at an unacceptable LOS E or worse.

The following intersections, which are currently operating at an acceptable level of service, would experience an increase in traffic due to the proposed Housing Element that would cause the level of service to deteriorate to a LOS E or F, thus resulting in a significant impact according to the County’s standards of significance:

3. Deer Park Road/Silverado Trail
8. Trancas Street/Monticello Road (State Route 121)/Silverado Trail (State Route 121)
13. Carneros Highway (State Route 121)/Sonoma Highway (State Route 12)/State Route 29

The following intersections, which are already operating at an unacceptable LOS E or F under existing conditions, would experience an increase in traffic from the proposed Housing Element that would increase the volume to capacity (V/C) ratio by 5 percent or more, thus resulting in a significant impact according to the County’s standards of significance:

4. St. Helena Highway (State Route 29)/Rutherford Road (State Route 128)
12. Imola Avenue (State Route 121)/Soscol Avenue (State Route 121/221)
14. Sonoma Highway (State Route 12)/State Route 29/Napa Vallejo Highway (State Route 221)
15. Jameson Canyon Road (State Route 12)/State Route 29

At each of these intersections, improvements could be made that would mitigate the impacts to a less-than-significant level. These improvements are described in Section I below as mitigation measures.

In addition to intersections identified in this study, it is expected that other intersections in the study area would experience traffic impacts if the Napa Pipe site were developed with housing and other uses. These other locations have been included in a project-specific analysis for the Napa Pipe project. The following intersections were studied as a part of the Napa Pipe Draft Transportation Impact Analysis (TIA) completed in November 2008:

1. Lincoln Avenue/Soscol Avenue
2. 1st Street/Soscol Avenue (Housing Element Intersection #10)
3. 1st Street/Silverado Trail (State Route 121) (Housing Element Intersection #9)
4. 3rd Street/ Soscol Avenue
5. 3rd Street/Coombsville Road/Silverado Trail (State Route 121)
6. Soscol Avenue/Silverado Trail (State Route 121) (Housing Element Intersection #11)
7. State Route 29 Southbound Ramps/Imola Avenue (State Route 121)
8. State Route 29 Northbound Ramps/Imola Avenue (State Route 121)
9. Imola Avenue (State Route 121)/Jefferson Street
10. Imola Avenue (State Route 121)/Coombs Street
11. Imola Avenue (State Route 121)/Gasser Drive
12. Imola Avenue (State Route 121)/Soscol Avenue (State Route 121/221) (Housing Element Intersection #12)
13. Streiblow Drive/ Napa-Vallejo Highway (State Route 221)
14. Industrial Way/Kaiser Road
15. Napa Valley Corporate Drive/Kaiser Road
16. Enterprise Way/Kaiser Road
17. Kaiser Road/Napa-Vallejo Highway (State Route 221)
18. Napa Valley Corporate Drive/Latour Court
19. Napa Valley Corporate Drive/Napa Valley Corporate Way
20. Napa Valley Corporate Way/Napa-Vallejo Highway (State Route 221)
21. Napa Valley Corporate Drive/Trefethen Way
22. Napa Valley Corporate Drive/Anselmo Court
23. Carneros Highway (State Route 121)/Sonoma Highway (State Route 12)/Highway 29 (Housing Element Intersection #13)
24. Napa Valley Corporate Drive/Soscol Ferry Road
25. Devlin Road/Soscol Ferry Road
26. Sonoma Highway (State Route 12)/Highway 29/Napa Vallejo Highway (State Route 221) (Housing Element Intersection #14)
27. Jameson Canyon Road (State Route 12)/State Route 29 (Housing Element Intersection #15)
28. State Route 29/American Canyon Road
29. State Route 29/ Westbound State Route 37 Off-ramp
Under existing conditions, eight of the 29 intersections are operating at an unacceptable level of service. Two more intersections degrade to an unacceptable level of service under Baseline Conditions, which is described in the report as Existing Condition with the addition of approved projects. The addition of the Napa Pipe project would exacerbate these intersections operating at an unacceptable level of service, as well as degrade three additional intersections from acceptable operations to an unacceptable level of service. A summary of the intersections exceeding the established thresholds are presented in Table 4.4-6. Intersections that do not exceed established thresholds under any scenario are not listed in the table.

Please note that the conditions studied under the Napa Pipe Draft TIA were different than those studied in this Housing Element EIR, so the study results for the intersections that were analyzed in both studies are different. The Napa Pipe Draft TIA is available at the Napa County Department of Conservation, Development and Planning for review of the detailed impact analysis and mitigation measures.

2. Substantial Increase in Hazards

The proposed housing programs and sites would increase the amount of vehicles on Napa County’s roadways, and could therefore contribute to hazards on winding rural roads or create potential adverse effects on emergency access needs. This is of particular concern in the Angwin and Spanish Flat areas, where high fire danger coupled with rural roads makes emergency vehicle access essential.

Roadways in these areas are generally classified as Minor Arterials or Rural Collectors in the General Plan. The assumed capacity of a Minor Arterial is 800 vehicles per hour per lane. Table 4.4-7 compares the capacity of these rural roadways to the total forecasted 2015 PM peak hour directional volume with traffic contributions from the proposed Housing Element. Development on the Spanish Flat site would produce 106 PM peak hour auto trips. Development on the Angwin sites would generate about 192 PM peak hour
**Table 4.4-6**  **Summary of Facilities that Exceed Established Thresholds (Napa Pipe Study)**

<table>
<thead>
<tr>
<th>Scenario</th>
<th>Intersection</th>
</tr>
</thead>
<tbody>
<tr>
<td>4. <strong>Existing Conditions</strong></td>
<td>2. 1st Street/Soscol Avenue <em>(Housing Element Intersection #10)</em></td>
</tr>
<tr>
<td>5. <strong>Baseline Conditions</strong></td>
<td>3rd Street/Coombsville Road/Silverado Trail <em>(SR 121)</em></td>
</tr>
<tr>
<td>7. <strong>Project Conditions</strong></td>
<td>State Route 29 Southbound Ramps/Imola Avenue <em>(SR 121)</em></td>
</tr>
<tr>
<td>8. <strong>Project Conditions</strong></td>
<td>State Route 29 Northbound Ramps/Imola Avenue <em>(SR 121)</em></td>
</tr>
<tr>
<td>9. <strong>Project Conditions</strong></td>
<td>Imola Avenue <em>(SR 121)/Jefferson Street</em></td>
</tr>
<tr>
<td>12. 12. Imola Avenue *(SR 121)/Soscol Avenue (SR 121/221) <em>(Housing Element Intersection #12)</em></td>
<td></td>
</tr>
<tr>
<td>13. <strong>Scenario</strong></td>
<td>Streblow Drive/ Napa-Vallejo Highway <em>(SR 221)</em></td>
</tr>
<tr>
<td>16. <strong>Scenario</strong></td>
<td>Enterprise Way/Kaiser Road</td>
</tr>
<tr>
<td>17. <strong>Scenario</strong></td>
<td>Kaiser Road/Napa-Vallejo Highway <em>(SR 221)</em></td>
</tr>
<tr>
<td>25. <strong>Scenario</strong></td>
<td>Devlin Road/Soscol Ferry Road</td>
</tr>
<tr>
<td>26. 26. Sonoma Highway *(SR 12)/ Highway 29/Napa Valleso Highway *(SR 221) <em>(Housing Element Intersection #14)</em></td>
<td></td>
</tr>
<tr>
<td>27. <strong>Scenario</strong></td>
<td>Jameson Canyon Road *(SR 12)/ State Route 29 <em>(Housing Element Intersection #15)</em></td>
</tr>
<tr>
<td>28. <strong>Scenario</strong></td>
<td>State Route 29/American Canyon Road <em>(American Canyon Intersection #23)</em></td>
</tr>
</tbody>
</table>

trips. Adding this level of traffic to adjacent roadways would have minimal impact when comparing the roadway capacity to the total amount of traffic.

As shown in Table 4.4-7, even with the additional development allowed under the Housing Element, roadways in the Angwin and Spanish Flat areas would still be operating significantly under capacity. Any forecasting of collision rates due to increased traffic would be speculative. Therefore, development of housing on the Angwin and Spanish Flat sites would have less-than-significant impacts on roadway hazards in terms of roadway capacity.

3. Alternative Transportation

As described above, none of the proposed housing sites are directly served by existing transit or bicycle or pedestrian facilities.

Given the relatively low-density land use patterns in Napa County and the associated level of transit service that can be supported, the programs and sites proposed by the Housing Element Update are not likely to generate transit ridership demand beyond what the existing system can accommodate. A number of recent studies have shown that commuters are willing to walk approximately ¼-mile to access transit. If commuters can’t reach a transit stop within a ¼-mile walk, they will generally opt to drive to their destination or to use a park and ride lot. Much of the housing development on the programs and sites would be greater than a ¼-mile walk from the nearest transit stop, so new residents on these sites would be unlikely to use existing transit services. If transit service is re-routed to serve the major housing sites, ridership levels should be revisited as transit demand would certainly increase. For the purpose of this study, and other transportation impact analyses in Napa County, transit ridership is generally not assumed in an effort to provide a conservative auto generation.

The proposed Housing Element Update corresponds with the General Plan goal of maintaining a rural character, but conflicts with adopted policies, plans or programs supporting alternative transportation. The housing site
Table 4.4-7  ROADWAY CAPACITIES AROUND THE ANGWIN AND SPANISH FLAT DEVELOPMENT SITES

<table>
<thead>
<tr>
<th>Intersection</th>
<th>Capacity</th>
<th>Total Volume (Direction)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Howell Mountain Road between Pope Valley Road and College Road</td>
<td>810</td>
<td>235 (NB)</td>
</tr>
<tr>
<td>2. Howell Mountain Road between College Road and Cold Springs Road</td>
<td>810</td>
<td>405 (NB)</td>
</tr>
<tr>
<td>3. Howell Mountain Road between Cold Springs Road and Deer Park Road</td>
<td>810</td>
<td>395 (NB)</td>
</tr>
<tr>
<td>4. Deer Park Road between Howell Mountain Road and Silverado Trail</td>
<td>810</td>
<td>500 (EB)</td>
</tr>
<tr>
<td>5. Berryessa Knoxville Road between Spanish Flat Loop Road and Capell Valley Road</td>
<td>800</td>
<td>95 (NB)</td>
</tr>
<tr>
<td>6. Capell Valley Road between Berryessa Knoxville Road and State Route 121</td>
<td>1,200</td>
<td>255 (NB)</td>
</tr>
<tr>
<td>7. State Route 221 between Capell Valley Road and Atlas Peak Road</td>
<td>800</td>
<td>625 (NB)</td>
</tr>
</tbody>
</table>

* Capacity identified in Napa County General Plan EIR, Appendix C (2008) for Minor Arterial (passenger cars per lane per hour).
Source: Fehr & Peers, 2008

locations do not promote external trips to utilize bicycle, pedestrian or transit facilities. This is a potentially significant impact requiring mitigation.

4. Inadequate Parking Capacity
The proposed housing programs and sites will generate the need for parking to serve the residents of the new units. However, Policy CIR-23 of the General Plan Circulation Element requires that new uses provide adequate parking to meet their anticipated parking demand, and the Zoning Code establishes specific parking requirements for different use types. Housing generated under the proposed Housing Element Update would be required to conform to these General Plan and Zoning Code requirements, resulting in a less-
than-significant parking impact. For the Napa Pipe project, the project-specific EIR will describe how the proposed parking supply would be configured to meet anticipated demand.

H. Cumulative Conditions

This section discusses future Year 2030 conditions with traffic added to the transportation system associated with the proposed Housing Element and other reasonably-foreseeable development projects. Buildout of the units allowed under the programs and on the housing sites in Angwin, Moskowite Corner, Spanish Flat and approximately 50 acres of Napa Pipe are expected by 2015. Full buildout for Napa Pipe, including approximately 150 acres, is expected by 2030, along with increases in housing and employment elsewhere in the county and the region. The discussion below identifies cumulative impacts to which the project contributes substantial traffic volumes.

1. General Plan EIR

Although the analysis for this study does not include additional roadway segment analysis, the County’s General Plan EIR identified cumulative volumes and assessed operations for the roadway network within the county. Under cumulative (Year 2030) conditions, 39 out of 94 locations would operate at LOS E or F, which is considered substandard by the County. Some roadway segments would operate at substandard levels in only one direction. Roadways operating at LOS E or F in one direction or more include the following:

- American Canyon Road – Interstate 80 to Flosden Road
- Deer Park Road – Sanitarium Road to Silverado Trail
- Deer Park Road – Silverado Trail to St. Helena Highway (State Route 29)
- Flosden Road – American Canyon Road to Napa to Solano County Line
- Napa Vallejo Highway – Kaiser Road to Highway 29 to Highway 12
- Petrified Forest Road – Foothill Boulevard (State Route 128) to Franz Valley School Road
- Silverado Trail – Oak Knoll Avenue to Hardman Avenue
Table 4.4-13 from the Napa County General Plan Draft EIR (see Appendix B) presents the complete list of study segments within the county and their corresponding level of service and V/C ratio. Table 4.4-8 presents these road segments, the forecasted cumulative PM peak hour traffic volumes from the General Plan EIR, and the traffic projected in this study from the development identified by the Housing Element. Roadways with minimal traffic contribution from the Housing Element sites or roadway segments outside the Housing Element’s study area, which includes those roadways adjacent to the study intersections, were excluded from the table. Also note that the General Plan forecasts and the project trips were developed under separate efforts and were not intended to be directly compared.
As shown in Table 4.4-8, the proposed Housing Element Update would contribute to significant and unavoidable impacts from the General Plan EIR, resulting in a significant cumulative impact requiring mitigation.

2. Traffic Forecasts
Cumulative (Year 2030) traffic volumes are based on output from the Napa/Solano County Travel Demand Forecasting (TDF) Model and previously-prepared transportation impact analyses. Cumulative conditions consist of Year 2030 land use projections and fully programmed and funded roadway improvements in Napa County. Improvements that are proposed in the General Plan Circulation Element, but that are not funded, are not included in the model or reflected in the model output. Final forecasted volumes were based on the travel demand model outputs, knowledge of the study area, 2007 ABAG projections and engineering judgment.

3. Operations Analysis
Cumulative conditions intersection contribution from the Housing Element sites or roadway segments outside the Housing was calculated at each study intersection for the weekday AM and PM peak hour. Detailed level of service calculations are available at the Napa County Department of Conservation, Development and Planning. Table 4.4-9 presents the resulting contribution from the Housing Element sites or roadway segments outside the Housing and corresponding delay at each study intersection. As shown in Table 4.4-9, ten of the 15 study intersections are expected to operate worse than the minimum threshold of LOS D under Year 2030 conditions. The Housing Element is expected to contribute to an increase of traffic that will cause the following intersections to deteriorate from acceptable operations in existing

---

3 Napa/Solano County Travel Demand Forecasting Model was calibrated and validated as part of the Napa Pipe EIR study. Fehr & Peers conducted a detailed review of the Napa/Solano County TDF model to determine its ability to produce locally-valid traffic forecasts within the study area. See Appendix A to review the Napa/Solano County TDF model validation. Assumed land use and roadways were approved by Napa County staff.
### Table 4.4-8: Project Contribution to Cumulative Roadway Conditions

<table>
<thead>
<tr>
<th>General Plan EIR Roadway Segment Number and Road Name</th>
<th>Direction</th>
<th>Segment Limit North/East</th>
<th>Segment Limit South/West</th>
<th>2030 Project Trips</th>
<th>2030 Cumulative Trips</th>
<th>% Housing Element Contribution</th>
</tr>
</thead>
<tbody>
<tr>
<td>7. Deer Park Road EB</td>
<td>Silverado Trail</td>
<td>St. Helena Highway (SR 29/128)</td>
<td>80</td>
<td>885</td>
<td>9.0%</td>
<td></td>
</tr>
<tr>
<td>13. Napa Vallejo Highway NB</td>
<td>Kaiser Road</td>
<td>Highway 29 (SR 29/12)</td>
<td>675</td>
<td>5,270</td>
<td>12.8%</td>
<td></td>
</tr>
<tr>
<td>14. Napa Vallejo Highway SB</td>
<td>Kaiser Road</td>
<td>Highway 29 (SR 29/12)</td>
<td>505</td>
<td>1,530</td>
<td>33.0%</td>
<td></td>
</tr>
<tr>
<td>33. Silverado Trail NB</td>
<td>Calistoga City Limits</td>
<td>Lincoln Ave (SR 29)</td>
<td>17</td>
<td>600</td>
<td>2.8%</td>
<td></td>
</tr>
<tr>
<td>35. Soscol Avenue NB</td>
<td>First Street</td>
<td>Silverado Trail</td>
<td>128</td>
<td>2,123</td>
<td>6.0%</td>
<td></td>
</tr>
<tr>
<td>39. State Route 12/121 EB</td>
<td>Cuttings Wharf Road</td>
<td>Stanly Road</td>
<td>76</td>
<td>1,235</td>
<td>6.2%</td>
<td></td>
</tr>
<tr>
<td>40. State Route 12/121 WB</td>
<td>Cuttings Wharf Road</td>
<td>Stanly Road</td>
<td>55</td>
<td>2,509</td>
<td>2.2%</td>
<td></td>
</tr>
<tr>
<td>41. State Route 12 EB</td>
<td>Lynch Road</td>
<td>Kelly Road</td>
<td>105</td>
<td>3,571</td>
<td>2.9%</td>
<td></td>
</tr>
<tr>
<td>42. State Route 12 WB</td>
<td>Lynch Road</td>
<td>Kelly Road</td>
<td>141</td>
<td>2,841</td>
<td>5.0%</td>
<td></td>
</tr>
<tr>
<td>43. State Route 121 EB</td>
<td>Wooden Valley Road</td>
<td>Vichy Avenue</td>
<td>79</td>
<td>1,018</td>
<td>7.8%</td>
<td></td>
</tr>
<tr>
<td>67. State Route 29 NB</td>
<td>Green Island Road</td>
<td>American Canyon Road</td>
<td>381</td>
<td>3,084</td>
<td>12.4%</td>
<td></td>
</tr>
<tr>
<td>68. State Route 29 SB</td>
<td>Green Island Road</td>
<td>American Canyon Road</td>
<td>282</td>
<td>2,741</td>
<td>10.3%</td>
<td></td>
</tr>
<tr>
<td>71. State Route 29 NB</td>
<td>Oakville Grade</td>
<td>Madison Street</td>
<td>38</td>
<td>2,392</td>
<td>1.6%</td>
<td></td>
</tr>
<tr>
<td>72. State Route 29 SB</td>
<td>Oakville Grade</td>
<td>Madison Street</td>
<td>32</td>
<td>2,108</td>
<td>1.5%</td>
<td></td>
</tr>
<tr>
<td>73. State Route 29 NB</td>
<td>Rutherford Cross Road (SR 128)</td>
<td>Oakville Grade</td>
<td>38</td>
<td>2,088</td>
<td>1.8%</td>
<td></td>
</tr>
<tr>
<td>74. State Route 29 SB</td>
<td>Rutherford Cross Road (SR 128)</td>
<td>Oakville Grade</td>
<td>32</td>
<td>1,814</td>
<td>1.8%</td>
<td></td>
</tr>
<tr>
<td>75. State Route 29 NB</td>
<td>Chaix Lane</td>
<td>Zinfandel Lane</td>
<td>48</td>
<td>2,300</td>
<td>2.1%</td>
<td></td>
</tr>
<tr>
<td>76. State Route 29 SB</td>
<td>Chaix Lane</td>
<td>Zinfandel Lane</td>
<td>50</td>
<td>1,727</td>
<td>2.9%</td>
<td></td>
</tr>
<tr>
<td>79. State Route 29 NB</td>
<td>Kelly Road</td>
<td>Jamieson Cyn Road (SR 12)</td>
<td>554</td>
<td>7,591</td>
<td>7.3%</td>
<td></td>
</tr>
<tr>
<td>80. State Route 29 SB</td>
<td>Kelly Road</td>
<td>Jamieson Cyn Road (SR 12)</td>
<td>410</td>
<td>3,468</td>
<td>11.8%</td>
<td></td>
</tr>
<tr>
<td>83. State Route 29 NB</td>
<td>Napa-Vallejo Highway (SR 221)</td>
<td>Carneros Highway (SR 121/12)</td>
<td>82</td>
<td>5,931</td>
<td>1.4%</td>
<td></td>
</tr>
</tbody>
</table>

Notes: Roadways with minimal traffic contribution from the Housing Element development sites or roadway segments outside the defined study area were excluded from this table. Also note that the General Plan forecasts and the project trips were developed under separate efforts and were not intended to be directly compared.

*2030 PM Cumulative Trips come from Napa County General Plan Update EIR (2007).*
### Table 4.4-9: Cumulative (Year 2030) Intersection Level of Service

<table>
<thead>
<tr>
<th>Intersection</th>
<th>Traffic Control</th>
<th>AM Peak Hour</th>
<th>PM Peak Hour</th>
<th>AM Peak Hour</th>
<th>PM Peak Hour</th>
<th>AM Peak Hour</th>
<th>PM Peak Hour</th>
<th>Cumulative (Year 2030) Conditions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Delay(^b) V/C(^b) LOS</td>
<td>Delay V/C LOS</td>
<td>Delay V/C LOS</td>
<td>Delay V/C LOS</td>
<td>Delay V/C LOS</td>
<td>Delay V/C LOS</td>
<td>Delay V/C LOS</td>
<td></td>
</tr>
<tr>
<td>2. Cold Springs Rd./Howell Mountain Rd.</td>
<td>SSS 14 - B 11 - B</td>
<td>16 - C</td>
<td>12 - B</td>
<td>22 - D 19 - C</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Deer Park Rd./Silverado Trail</td>
<td>AWS 24 - C</td>
<td>&gt;50 0.69 F</td>
<td>25 - C</td>
<td>&gt;50 0.91 F 80 0.94 F</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. St. Helena Hwy. (SR 29)/Rutherford Rd. (SR 128)</td>
<td>SSS &gt;50 0.32 F</td>
<td>&gt;50 0.96 F</td>
<td>&gt;50 0.83 F 50 2.28 F</td>
<td>&gt;50 1.78 F 80 7.97 F</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Spanish Flat Loop Rd./Berryessa Knoxville Rd.</td>
<td>SSS 9 - A 9 - A</td>
<td>9 - A</td>
<td>9 - A 10 - A 9 - A</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Transac Street/Monticello Rd. (SR 121)/Silverado Trail (SR 121)</td>
<td>AWS 32 - D 18 - C</td>
<td>49 0.60 E</td>
<td>24 - C</td>
<td>&gt;50 0.92 F 80 1.10 F</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. 1st Street/Silverado Trail (SR 121)</td>
<td>Signal 17 - B 17 - B</td>
<td>18 - B 22 - C</td>
<td>34 - C</td>
<td>&gt;80 1.17 F</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. 1st Street/Soscol Ave.</td>
<td>Signal 16 - B 19 - B</td>
<td>20 - B 30 - C</td>
<td>24 - C</td>
<td>&gt;80 1.43 F</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11. Soscol Ave./Silverado Trail (SR 121)</td>
<td>Signal 22 - C 20 - B</td>
<td>31 - C 24 - C</td>
<td>60 1.16 E 64 1.12 E</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12. Imola Ave. (SR 121)/Soscol Ave. (SR 121/221)</td>
<td>Signal &gt;80 1.36 F</td>
<td>&gt;80 1.31 F</td>
<td>&gt;80 1.58 F</td>
<td>&gt;80 1.44 F</td>
<td>&gt;80 1.79 F 80 1.76 F</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13. Carneros Hwy. (SR 121)/Sonoma Hwy. (SR 12/29)</td>
<td>Signal 53 - D 46 - D</td>
<td>&gt;80 1.05 F</td>
<td>&gt;80 1.07 F</td>
<td>&gt;80 1.37 F 80 1.62 F</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14. Sonoma Hwy. (SR 12)/State Route 29/Napa Valley Hwy. (SR 221)</td>
<td>Signal &gt;80 1.14 F</td>
<td>&gt;80 1.31 F</td>
<td>&gt;80 1.38 F</td>
<td>&gt;80 1.44 F</td>
<td>&gt;80 2.05 F 80 1.92 F</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15. Jameson Canyon Rd. (SR 12)/State Route 29</td>
<td>Signal &gt;80 1.09 F</td>
<td>37 - D</td>
<td>&gt;80 1.26 F</td>
<td>&gt;80 1.13 F</td>
<td>&gt;80 1.69 F 80 2.12 F</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: Delay reported in seconds per vehicle; LOS = Level of Service
- **Bold** = unacceptable operations
- **Shaded** = significant impact
- Signal = Signalized intersection; AWS = All-Way Stop-Controlled intersection; SSS = Side-Street Stop-Controlled intersection
- \(^a\) Signalized and AWS intersection level of service based on average control delay per vehicle, according to the Highway Capacity Manual - Special Report 209 (Transportation Research Board, 2000). Side-street stop-controlled intersection level of service based on worst control delay, according to the HCM - Special Report 209 (Transportation Research Board, 2000).
- \(^b\) Delay per vehicle reported for intersections operating at an acceptable LOS D or better. Volume-to-capacity (V/C) ratio reported for intersections operating at an unacceptable LOS E or worse.

conditions to an unacceptable LOS E or F under cumulative conditions, resulting in a significant impact requiring mitigation:

3. Deer Park Road/Silverado Trail
8. Trancas Street/Monticello Road (State Route 121)/Silverado Trail (State Route 121)
9. 1st Street/Silverado Trail (State Route 121)
10. 1st Street/Soscol Avenue
11. Soscol Avenue/Silverado Trail (State Route 121)
12. Trancas Street/Silverado Trail (State Route 121)
13. Carneros Highway (State Route 121)/Sonoma Highway (State Route 12)/State Route 29
14. St. Helena Highway (State Route 29)/Rutherford Road (State Route 128)
15. Soscol Avenue/Imola Avenue (State Route 121/Soscol Avenue (State Route 121/221)
16. Sonoma Highway (State Route 12)/State Route 29/Napa Vallejo Highway (State Route 221)
17. Jameson Canyon Road (State Route 12)/State Route 29

The project is expected to contribute to an increase of more than 5 percent in the V/C ratio at the following intersections that are currently operating at unacceptable levels, resulting in a significant impact requiring mitigation:

4. St. Helena Highway (State Route 29)/Rutherford Road (State Route 128)
12. Imola Avenue (State Route 121)/Soscol Avenue (State Route 121/221)
14. Sonoma Highway (State Route 12)/State Route 29/Napa Vallejo Highway (State Route 221)
15. Jameson Canyon Road (State Route 12)/State Route 29

As stated in Section G.1 above, it is likely that impacts would occur at other locations such as those in the Napa Pipe Draft Transportation Impact Analysis and the American Canyon Citywide Circulation Study Administrative Draft Report. Analyses in these studies identify a combined 32 study intersections exceeding identified thresholds under Cumulative Conditions (with a fully-funded roadway network). A summary of these impacts are presented in Table 4.4-10 and 4.4-11. Intersections that do not exceed established thresholds under any scenario are not listed in the tables. As noted in Section G.1, the conditions studied under the Napa Pipe Draft TIA were different than those studied in this Housing Element EIR, so the study results for the intersections that were analyzed in both studies are different. However, under cumulative conditions, the results of these two studies are very similar.
### Table 4.4-10 Summary of Facilities that Exceed Established Thresholds (Napa Pipe Study)

<table>
<thead>
<tr>
<th>Scenario</th>
<th>Intersection</th>
<th>Existing Conditions</th>
<th>Baseline Conditions</th>
<th>Project Conditions</th>
<th>Cumulative Conditions (Fully-Funded Rd. Network)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Lincoln Ave./Soscol Ave.</td>
<td>X</td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>2.</td>
<td>1st Street/Soscol Ave. (Housing Element Intersection #10)</td>
<td></td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>3.</td>
<td>1st Street/Silverado Trail (SR 121) (Housing Element Intersection #9)</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>4.</td>
<td>3rd Street/Soscol Ave.</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>5.</td>
<td>3rd Street/Coombsville Rd./Silverado Trail (SR 121)</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>6.</td>
<td>Soscol Ave./Silverado Trail (SR 121) (Housing Element Intersection #11)</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>7.</td>
<td>State Route 29 Southbound Ramps/Imola Ave. (SR 121)</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>8.</td>
<td>State Route 29 Northbound Ramps/Imola Ave. (SR 121)</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>9.</td>
<td>Imola Ave. (SR 121)/Jefferson St.</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>10.</td>
<td>Imola Ave. (SR 121)/Coombs St.</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>11.</td>
<td>Imola Ave. (SR 121)/Gasser Dr.</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>12.</td>
<td>Imola Ave. (SR 121)/Soscol Ave. (SR 121/221) (Housing Element Intersection #12)</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>13.</td>
<td>Streblow Drive/Napa-Vallejo Highway (SR 221)</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>17.</td>
<td>Kaiser Rd./Napa-Vallejo Highway (SR 221)</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>20.</td>
<td>Napa Valley Corporate Way/ Napa-Vallejo Highway (SR 221)</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
</tbody>
</table>
### TABLE 4.4-10  SUMMARY OF FACILITIES THAT EXCEED ESTABLISHED THRESHOLDS (NAPA PIPE STUDY) (CONTINUED)

<table>
<thead>
<tr>
<th>Scenario</th>
<th>Existing Conditions</th>
<th>Baseline Conditions</th>
<th>Project Conditions</th>
<th>Cumulative Conditions (Fully-Funded Rd. Network)</th>
</tr>
</thead>
<tbody>
<tr>
<td>23. Carneros Highway (SR 121)/Sonoma Highway (SR 12)/Highway 29 (Housing Element Intersection #13)</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>24. Napa Valley Corporate Drive/Soscol Ferry Rd.</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>25. Devlin Rd./Soscol Ferry Rd.</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>26. Sonoma Highway (SR 12)/Highway 29/Napa Vallejo Highway (State Route 221) (Housing Element Intersection #14)</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>27. Jameson Canyon Rd. (SR 12)/State Route 29 (Housing Element Intersection #15)</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>28. State Route 29/American Canyon Rd. (American Canyon Intersection #23)</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>29. State Route 29/Westbound State Route 37 Off-ramp</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
</tbody>
</table>

Table 4.4-11  SUMMARY OF FACILITIES THAT EXCEED ESTABLISHED THRESHOLDS (AMERICAN CANYON STUDY)

<table>
<thead>
<tr>
<th>Intersection</th>
<th>Scenario</th>
<th>Existing Conditions</th>
<th>Cumulative Conditionsa</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. State Route 29/Tower Road</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>2. State Route 29/Devlin Road</td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>4. Green Island Road/Paoli Loop Road</td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>9. State Rout 29/Napa Junction Road</td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>12. State Route 29/Rio Del Mar</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>14. State Route 29/Poco Way (South Napa Junction Road)</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>16. State Route 29/Donaldson Way</td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>19. State Route 29/Crawford Way</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>23. State Route 29/Amewrican Canyon Road (Napa Pipe Intersection #28)</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>27. State Route 29/Kimberly Drive</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>29. State Route 29/Eucalyptus Drive</td>
<td></td>
<td></td>
<td>X</td>
</tr>
</tbody>
</table>

a  State Route 29 assumed to be four lanes under this scenario.


The reports have similar forecasts along the State Route 29 corridor, with the Napa Pipe study being a bit more conservative with higher traffic volumes. The Napa Pipe study forecasts were based on the STA/NCTPA Solano-Napa County regional travel demand forecasting model. The American Canyon study involved the development of a sub-area model that is based on the regional model used in the Napa Pipe study. Although the two studies deviate in methodology, the resulting recommendation to widen State Route 29 to six lanes under cumulative conditions was consistent.
The Napa Pipe Draft Transportation Impact Analysis is available at the Napa County Department of Conservation, Development and Planning for review of the detailed impact analysis and mitigation measures.

4. Substantial Increase in Hazards
The proposed housing programs and sites would increase the amount of vehicles on Napa County’s roadways, and could therefore contribute to hazards on winding rural roads or create potential adverse effects on emergency access needs. Table 4.4-12 compares the capacity of these rural roadways to the forecasted Cumulative (Year 2030) PM peak hour directional volume with traffic contributions from the proposed Housing Element. Due to the relatively low traffic contribution from the housing sites and the available capacity on the circulation network, the proposed Housing Element Update would have a less-than-significant impact related to roadway hazards as it pertains to capacity.

5. Alternative Transportation
None of the proposed housing sites are directly served by existing transit or bicycle or pedestrian facilities. Given the relatively low-density land use patterns in Napa County and the associated level of transit service that can be supported, the programs and sites proposed by the Housing Element Update are not likely to generate transit ridership demand beyond what the existing system can accommodate because much of the housing development on the programs and sites would be greater than a ¼-mile walk from the nearest transit stop, so new residents on these sites would be unlikely to use existing transit services. If transit service is re-routed to serve the proposed housing sites, ridership levels should be revisited as transit demand would certainly increase. For the purpose of this study, and other transportation impact analyses in Napa County, transit ridership is generally not assumed in an effort to provide a conservative auto generation.

As stated in Section G.3, the proposed Housing Element Update corresponds with the General Plan goal of maintaining a rural character, but conflicts with adopted policies, plans or programs supporting alternative transportation. The
### TABLE 4.4-12  ROADWAY CAPACITIES AROUND THE ANGWIN AND SPANISH FLAT DEVELOPMENT SITES

<table>
<thead>
<tr>
<th>Intersection</th>
<th>Capacity&lt;sup&gt;a&lt;/sup&gt;</th>
<th>Total Volume (Direction)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Howell Mountain Road between Pope Valley Road and College Road</td>
<td>810</td>
<td>300 (NB)</td>
</tr>
<tr>
<td>2. Howell Mountain Road between College Road and Cold Springs Road</td>
<td>810</td>
<td>460 (NB)</td>
</tr>
<tr>
<td>3. Howell Mountain Road between Cold Springs Road and Deer Park Road</td>
<td>810</td>
<td>490 (NB)</td>
</tr>
<tr>
<td>4. Deer Park Road between Howell Mountain Road and Silverado Trail</td>
<td>810</td>
<td>590 (EB)</td>
</tr>
<tr>
<td>5. Berryessa Knoxville Road between Spanish Flat Loop Road and Capell Valley Road</td>
<td>800</td>
<td>110 (NB)</td>
</tr>
<tr>
<td>6. Capell Valley Road between Berryessa Knoxville Road and State Route 121</td>
<td>1200</td>
<td>340 (NB)</td>
</tr>
<tr>
<td>7. State Route 221 between Capell Valley Road and Atlas Peak Road</td>
<td>800</td>
<td>710 (NB)</td>
</tr>
</tbody>
</table>

<sup>a</sup> Capacity identified in Napa County General Plan EIR, Appendix C (2008) for Minor Arterial (passenger cars per lane per hour)


Housing site locations do not promote the use of bicycle, pedestrian or transit facilities. This is a potentially significant impact requiring mitigation.

### I. Impacts and Mitigation Measures

This section summarizes impacts and presents mitigations available to address impacts found to be significant. The effectiveness of mitigation measures was evaluated by incorporating the traffic-related improvements into the Synchro analysis platform with the forecasted traffic volumes. In general, these improvements would mitigate the traffic impacts to a less-than-significant level,
but in some cases, intersection/roadway widening may introduce new impacts to bicycles and/or pedestrians.

Year 2015 intersection level of service and delay per vehicle under mitigated conditions are presented in Table 4.4-13. Mitigated intersection lane configurations and traffic controls for Year 2015 conditions are presented on Figure 4.4-7.

Cumulative (Year 2030) intersection level of service and delay per vehicle under mitigated conditions are presented in Table 4.4-14. Mitigated intersection lane configurations and traffic controls under cumulative conditions are presented in Figures 4.4-8a, 4.4-8b and 4.4-9.

**Impact TRAF-1:** Project-related traffic would increase the V/C ratio by more than 5 percent at the unsignalized intersection of Deer Park Road/Silverado Trail (Intersection 3) during the AM peak hour under Year 2015 and Cumulative (Year 2030) conditions. Unsignalized intersection operations would degrade from an acceptable LOS C to an unacceptable LOS E in Year 2015 and LOS F in Cumulative (Year 2030) during the PM peak traffic hour due to project related traffic.

**Mitigation Measure TRAF-1:** The County Public Works Department shall monitor operation of the intersection of Deer Park/Silverado Trail and convert the traffic signal equipment already installed at this intersection to operate as a standard traffic signal when warranted by delays. At the same time, each intersection approach shall be re-striped and/or reconfigured to provide, at a minimum, separate left-turn lanes and combined through/right-turn lanes.

Significance After Mitigation: *Less than significant.*

**Impact TRAF-2:** Project-related traffic would increase the V/C ratio by more than 5 percent at the unsignalized intersection of St. Helena Highway (State Route 29)/Rutherford Road (State Route 128) (Intersection 4) during both the
FIGURE 4.4-7

YEAR 2015 CONDITIONS
MITIGATED LANE CONFIGURATIONS

NAPA COUNTY HOUSING ELEMENT UPDATE
DRAFT EIR

LEGEND:
3 = Mitigated Intersections
\ = Existing
\ = Mitigation Improvements
* = Create Left-turn Flyover
\ = Install Traffic Signal as Mitigation Improvement
FIGURE 4.4-8A

CUMULATIVE (YEAR 2030) CONDITIONS
PEAK HOUR TRAFFIC VOLUMES

NAPA COUNTY HOUSING ELEMENT UPDATE
DRAFT EIR

Source: Fehr & Peers Transportation Consultants, 2008
FIGURE 4.4-9

CUMULATIVE (YEAR 2030) CONDITIONS
MITIGATED LANE CONFIGURATIONS

LEGEND:

3 = Mitigated Intersections

\* = Create Left-turn Flyover

\( \text{=} \) = Existing

\( \text{=} \) = Mitigation Improvements

\( \text{=} \) = Install Traffic Signal as Mitigation Improvement

Source: Fehr & Peers Transportation Consultants, 2008
<table>
<thead>
<tr>
<th>Intersection</th>
<th>Traffic Control</th>
<th>AM Peak Hour</th>
<th>PM Peak Hour</th>
<th>2015 Plus Project Mitigated Conditions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Existing Conditions</td>
<td>2015 Plus Project Mitigated Conditions</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>AM Peak Hour</td>
<td>PM Peak Hour</td>
<td>AM Peak Hour</td>
</tr>
<tr>
<td>3. Deer Park Road/Silverado Trail</td>
<td>AWS</td>
<td>Delay</td>
<td>V/C</td>
<td>LOS</td>
</tr>
<tr>
<td>4. St. Helena Highway (SR 29)/ Rutherford Road (SR 128)</td>
<td>SSS</td>
<td>&gt;50</td>
<td>0.32</td>
<td>F</td>
</tr>
<tr>
<td>8. Trancas Street/Monticello Road (SR 121)/ Silverado Trail (SR 121)</td>
<td>AWS</td>
<td>32</td>
<td>-</td>
<td>D</td>
</tr>
<tr>
<td>12. Imola Avenue (SR 121)/Soscol Avenue (SR 121/221)</td>
<td>Signal</td>
<td>&gt;80</td>
<td>1.36</td>
<td>F</td>
</tr>
<tr>
<td>13. Carneros Highway (SR 121)/ Sonoma Highway (SR 12)/SR 29</td>
<td>Signal</td>
<td>53</td>
<td>-</td>
<td>D</td>
</tr>
<tr>
<td>14. Sonoma Highway (SR 12)/State Route 29/Napa Vallejo Highway (SR 221)</td>
<td>Signal</td>
<td>&gt;80</td>
<td>1.14</td>
<td>F</td>
</tr>
<tr>
<td>15. Jameson Canyon Road (SR 12)/ State Route 29</td>
<td>Signal</td>
<td>&gt;80</td>
<td>1.09</td>
<td>F</td>
</tr>
</tbody>
</table>

Note: Delay reported in seconds per vehicle; LOS = Level of Service
**Bold** = unacceptable operations; **Shaded** = significant impact
Signal = Signalized intersection; AWS = All-Way Stop-Controlled intersection; SSS = Side-Street Stop-Controlled intersection

* a Signalized and AWS intersection level of service based on average control delay per vehicle, according to the Highway Capacity Manual - Special Report 209 (Transportation Research Board, 2000). Side-street stop-controlled intersection level of service based on worst control delay, according to the HCM - Special Report 209 (Transportation Research Board, 2000).

b Delay per vehicle reported for intersections operating at an acceptable LOS D or better. Volume-to-capacity (V/C) ratio reported for intersections operating at an unacceptable LOS E or worse.

### Table 4.4-14  CUMULATIVE (YEAR 2030) WITH MITIGATION INTERSECTION LEVEL OF SERVICE

<table>
<thead>
<tr>
<th>Intersection</th>
<th>Traffic Control</th>
<th>AM Peak Hour</th>
<th>PM Peak Hour</th>
<th>AM Peak Hour</th>
<th>PM Peak Hour</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Delay&lt;sup&gt;b&lt;/sup&gt;</td>
<td>V/C&lt;sup&gt;b&lt;/sup&gt;</td>
<td>LOS</td>
<td>Delay</td>
<td>V/C</td>
</tr>
<tr>
<td>3. Deer Park Road/Silverado Trail</td>
<td>AWS</td>
<td>24</td>
<td>-</td>
<td>C</td>
<td>16</td>
</tr>
<tr>
<td>4. St. Helena Highway (SR 29)/Rutherford Road (SR 128)</td>
<td>SSS</td>
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<td>0.32</td>
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<td>&gt;50</td>
</tr>
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<td>8. Trancas Street/Monticello Road (SR 121)/Silverado Trail (SR 121)</td>
<td>AWS</td>
<td>32</td>
<td>-</td>
<td>D</td>
<td>18</td>
</tr>
<tr>
<td>9. 1st Street/Silverado Trail (SR 121)</td>
<td>Signal</td>
<td>17</td>
<td>-</td>
<td>B</td>
<td>17</td>
</tr>
<tr>
<td>10. 1st Street/Soscol Avenue</td>
<td>Signal</td>
<td>16</td>
<td>-</td>
<td>B</td>
<td>19</td>
</tr>
<tr>
<td>11. Soscol Avenue/Silverado Trail (SR 121)</td>
<td>Signal</td>
<td>22</td>
<td>-</td>
<td>C</td>
<td>20</td>
</tr>
<tr>
<td>12. Imola Avenue (SR 121)/Soscol Avenue (SR 121/221)</td>
<td>Signal</td>
<td>&gt;80</td>
<td>1.36</td>
<td>F</td>
<td>&gt;80</td>
</tr>
<tr>
<td>13. Carneros Highway (SR 121)/Sonoma Highway (SR 12)/SR 29</td>
<td>Signal</td>
<td>53</td>
<td>-</td>
<td>D</td>
<td>46</td>
</tr>
<tr>
<td>14. Sonoma Highway (SR 12)/State Route 29/Napa Vallejo Highway (SR 221)</td>
<td>Signal</td>
<td>&gt;80</td>
<td>1.14</td>
<td>F</td>
<td>&gt;80</td>
</tr>
<tr>
<td>15. Jameson Canyon Road (SR 12)/State Route 29</td>
<td>Signal</td>
<td>&gt;80</td>
<td>1.09</td>
<td>F</td>
<td>37</td>
</tr>
</tbody>
</table>

**Note:** Delay reported in seconds per vehicle; LOS = Level of Service
- **Bold** = unacceptable operations; **Shaded** = significant impact
- **Signal** = Signalized intersection; **AWS** = All-Way Stop-Controlled intersection; **SSS** = Side-Street Stop-Controlled intersection

<sup>a</sup> Signalized and AWS intersection level of service based on average control delay per vehicle, according to the Highway Capacity Manual - Special Report 209 (Transportation Research Board, 2000). Side-street stop-controlled intersection level of service based on worst control delay, according to the HCM - Special Report 209 (Transportation Research Board, 2000).

<sup>b</sup> Delay per vehicle reported for intersections operating at an acceptable LOS D or better. Volume-to-capacity (V/C) ratio reported for intersections operating at an unacceptable LOS E or worse.

AM and PM peak hours under Year 2015 and Cumulative (Year 2030) conditions.

Mitigation Measure TRAF-2: The intersection of State Route 29/ State Route 128 in Rutherford shall be signalized, or improved with an alternate configuration to provide acceptable operations prior to 2015. The final configuration will be determined by Caltrans in consultation with the County Traffic Engineer and will be based on actual volumes and conditions at the intersection. As a State highway, State Route 29 is under Caltrans jurisdiction.

Significance After Mitigation: Less than significant.

Impact TRAF-3: Operations at the unsignalized intersection of Trancas Street/Monticello Road (State Route 121)/Silverado Trail (State Route 121) (Intersection 8) would degrade from an acceptable LOS D during the AM peak traffic hour and LOS C during the PM peak traffic hour to an unacceptable LOS F during both the AM and PM peak traffic hours under Year 2015 and Cumulative (Year 2030) conditions. Project-related traffic would increase the V/C ratio by more than 5 percent at this intersection.

Mitigation Measure TRAF-3: The County Public Works Department shall monitor operations at the intersection of Trancas/Monticello Road/Silverado Trail and shall provide for signalization or other improvements in order to provide acceptable operations (LOD D or better) as needed before 2030. The intersection contains a Caltrans controlled facility.

Significance After Mitigation: Less than significant.

Impact TRAF-4: Project-related traffic would increase the V/C ratio by more than 5 percent at the signalized intersection of Imola Avenue (State Route 121)/Soscol Avenue (State Route 121/221) (Intersection 12) during both the AM and PM peak hours under Year 2015 conditions.
Mitigation Measure TRAF-4: The intersection of Imola/Soscol (State Route 121 and 121/221) shall be reconstructed to provide an additional left-turn lane on the eastbound approach, an exclusive right-turn lane on the westbound approach, and an additional through lane on Soscol Avenue in both directions. Protected phasing shall be provided for the eastbound and westbound left-turn movements. Right-of-way acquisition may be required as part of this widening.

This mitigation measure would be consistent with recommendations from previous studies in the City of Napa. However, such an extensive widening of roadways at this intersection would substantially increase pedestrian crossing distances and may not be consistent with the County’s and City’s desire to promote transit and bicycling as alternative transportation modes.

This intersection is located within the City of Napa and includes a Caltrans controlled facility. If Mitigation Measure TRAF-4 were implemented under these conditions, the intersection would continue to operate at LOS F in the AM and PM peak hours, but the capacity of the intersection would be increased, so Housing Element-related traffic would no longer create an increase of over 5 percent to the V/C ratio. Therefore, the impact of the proposed Housing Element would be reduced to a less-than-significant level.

Significance After Mitigation: Less than significant.

Impact TRAF-5: Project-related traffic would increase the V/C ratio by more than 5 percent at the signalized intersection of Imola Avenue (State Route 121)/Soscol Avenue (State Route 121/221) (Intersection 12) during both the AM and PM peak hours under Cumulative (Year 2030) conditions.

Mitigation Measure TRAF-5: To achieve baseline conditions operations (LOS F) under Year 2030 conditions at the intersection of Imola/Soscol (State Route 121 and 121/221), the following configuration shall be constructed:
- Northbound: two left-turn, three through, and one right-turn lane
Southbound: two left-turn, three through, and one right-turn lane

Eastbound: two left-turn, two through, and one right-turn lane
(right-turn lane shall have overlap phasing during the AM peak hour)

Westbound: two left-turn, two through, and one right-turn lane

As with Mitigation Measure TRAF-4, this intersection is located within the City of Napa and includes a Caltrans controlled facility. If Mitigation Measure TRAF-5 were implemented, the intersection would continue to operate at LOS F in the AM and PM peak hours, but the capacity of the intersection would be increased, so Housing Element-related traffic would no longer create an increase of over 5 percent to the V/C ratio. Therefore, the impact of the proposed Housing Element would be reduced to a less-than-significant level. In order to achieve acceptable LOS D or better operations, advanced intersection treatment (e.g. grade-separation, continuous-flow operations) would be needed.

Significance After Mitigation: Less than significant.

Impact TRAF-6 and 7: Operations at the signalized intersection of Carneros Highway (State Route 121)/Sonoma Highway (State Route 12/ State Route 29) (Intersection 13) would degrade from LOS D to LOS F under Year 2015 conditions during both the AM and PM peak hours and project-related traffic would increase the V/C ratio by more than 5 percent. Also, operations would degrade from LOS D to LOS F under Cumulative (Year 2030) conditions during both the AM and PM peak hours, with project-related traffic increasing the V/C ratio by more than 5 percent.

Mitigation Measure TRAF-6 and 7: A second eastbound right-turn lane shall be constructed at the intersection of State Route 121/ State Route 29 prior to 2015 to achieve acceptable operations at this intersection and additional northbound and southbound through lane shall be constructed prior to 2030 if necessary to maintain acceptable operating conditions. As a State highway, State Route 29 is under Caltrans jurisdiction.

Significance After Mitigation: Less than significant.
Impact TRAF-8: Project-related traffic would increase the V/C ratio by more than 5 percent at the signalized intersection of Sonoma Highway (State Route 12)/State Route 29/Napa Vallejo Highway (State Route 221) (Intersection 14) during both the AM and PM peak hours under Year 2015 and Cumulative (Year 2030) conditions.

Mitigation Measure TRAF-8: Construct a southbound left-turn fly-over at the intersection of State Route 12/29 and State Route 221 and restrict the movements made at the at-grade intersection to the following:
- Northbound and southbound right-turns
- Eastbound and westbound through and right-turns

At this time, Napa County and Caltrans are cooperating to develop a preferred design for improvements to this intersection. This mitigation measure is the current preferred design.

This intersection currently functions at LOS F in both the AM and PM peak periods under existing conditions. This improvement, which would be needed regardless of the impacts of the proposed Housing Element, may have its own traffic circulation impacts and would require a separate and thorough environmental review process. If this improvement is constructed and adequate local access is provided, impacts to this intersection would be reduced to a less-than-significant level. As a State highway, State Route 29 is under Caltrans jurisdiction.

Significance After Mitigation: Less than significant.

Impact TRAF-9: Operations at the signalized intersection of Jameson Canyon Road (State Route 12)/State Route 29 (Intersection 15) would degrade from an acceptable LOS D to LOS F in the PM peak hour under Year 2015 and Cumulative (Year 2030) conditions. Project-related traffic would increase the V/C ratio by more than 5 percent in the AM peak hour for the intersection currently operating at an unacceptable LOS F.

Mitigation Measure TRAF-9: The intersection of State Route 12 and State Route 29 shall be reconstructed as a grade-separated interchange as
proposed in the Napa County General Plan. Construction of this interchange would improve operations at this location to acceptable levels and would reduce the project’s impact to a less-than-significant level. As a State highway, State Route 29 is under Caltrans jurisdiction.

**Significance After Mitigation:** *Less than significant.*

**Impact TRAF-10:** Operations at the signalized intersection of 1st Street/Silverado Trail (State Route 121) (Intersection 9) would degrade from an acceptable LOS B to an unacceptable LOS F during the PM peak traffic hour under Cumulative (Year 2030) Conditions.

**Mitigation Measure TRAF-10:** The intersection of 1st Street/Silverado Trail in the City of Napa shall be improved by constructing a second southbound through lane on Silverado Trail (State Route 121). Widening Silverado Trail at this location beyond a two-lane roadway would be in direct conflict with the City of Napa’s General Plan and would require City approval following a General Plan amendment.

**Significance After Mitigation:** *Less than significant.*

**Impact TRAF-11:** Operations at the signalized intersection of 1st Street/Soscol Avenue (Intersection 10) would degrade from an acceptable LOS B to an unacceptable LOS F during the PM peak traffic hour under Cumulative (Year 2030) conditions.

**Mitigation Measure TRAF-11:** The only possible solution for this cumulative impact would be to construct a third through lane on both the northbound and southbound approaches of Soscol Avenue, including widening of newly-constructed bridge structures to the north and south of the intersection. Widening Soscol Avenue beyond a four-lane roadway would be in direct conflict with the City of Napa’s General Plan and widening of the new bridge structures is not considered reasonable or feasible. Therefore, this cumulative impact is considered *significant and unavoidable.*
Significance After Mitigation: Significant and unavoidable.

Impact TRAF-12: Operations at the signalized intersection of Soscol Avenue/Silverado Trail (State Route 121) (Intersection 11) would degrade from an acceptable LOS C in the AM peak hour and LOS B in the PM peak hour to an unacceptable LOS E during both the AM and PM peak traffic hours under Cumulative (Year 2030) conditions.

Mitigation Measure TRAF-12: The intersection of Soscol/Silverado Trail shall be reconstructed to include an exclusive westbound left-turn lane while maintaining the shared left/right-turn lane. This would achieve an acceptable LOS C during both the AM and PM peak hours.

This intersection is located within the City of Napa and includes a Caltrans controlled facility. If the identified mitigation were implemented under these conditions, the impact would be reduced to a less-than-significant level.

Significance After Mitigation: Less than significant.

Impact TRAF-13: The proposed Housing Element Update would conflict with adopted policies, plans or programs supporting alternative transportation because the remote locations of the housing sites and the lack of alternative transportation facilities in these remote locations would not promote the use of bicycle, pedestrian, or transit facilities.

Mitigation Measure TRAF-13: The County shall work with VINE to establish transit stops, within ¼-mile of each proposed housing site, either by rerouting existing transit routes or by establishing new routes, prior to occupancy of the units. Alternatively, park-and-ride areas shall be provided near the sites. In addition, adequate bicycle and pedestrian connections shall be provided to these transit stops and adjacent land uses. Class II bicycle lane striping or Class III shared roadway signage shall be added to roadways connecting housing sites to employment or retail centers.
Significance After Mitigation: Less than significant.

Impact TRAF-14: The proposed Housing Element would contribute significant levels of vehicular traffic to roadway segments identified in the General Plan EIR as operating at an unacceptable level of service with cumulative traffic in Year 2030. In addition, development on the Napa Pipe site may significantly increase delays and/or contribute to significant cumulative delays at intersections not selected for analysis in this EIR.

Mitigation Measure TRAF-14: The County shall require site-specific evaluation and project-specific analysis of the Napa Pipe project prior to approval of a development agreement. The analysis shall extend beyond the intersections included in this program-level EIR to include all road segments and intersections that may be significantly impacted, and the developer shall be required to mitigate impacts as feasible. Potential impacts and mitigation measures are expected to resemble those outlined in the draft transportation study for the project cited in this EIR, although the feasibility of mitigation has not been determined yet, and this impact is therefore considered significant and unavoidable.

Significance After Mitigation: Significant and unavoidable.
This section describes the potential effects of the proposed Housing Element on biological resources. This section addresses issues such as protecting and enhancing the county’s biodiversity, sustaining populations of special-status species and maintaining the integrity of natural habitats. All relevant information related to the regulatory framework and existing conditions identified in Chapter 4.5 of the 2007 Napa County General Plan Draft EIR is incorporated by reference and briefly summarized. New and updated information pertaining to biological resource regulations and existing conditions is also included in this chapter.

A. **Regulatory and Policy Framework**

Section 4.5.2 of the 2007 Napa County General Plan Draft EIR contains a detailed description of the regulatory framework related to biological resources in the project area, including federal, State and local policies.

The federal regulations and programs relevant to biological resources include the Endangered Species Act (ESA), Migratory Bird Treaty Act (MBTA), Bald and Golden Eagle Protection Act, Clean Water Act (CWA) and Rivers and Harbors Act. Under the ESA, the US Fish and Wildlife Service and National Oceanic and Atmospheric Administration National Marine Fisheries Service identify endangered and threatened fish and wildlife species. These identified species and their habitats are protected by the ESA. The MBTA originates from treaties between the United States, Great Britain, Mexico, Japan and the Soviet Union to protect and regulate the “take” of migratory birds and their occupied nests and eggs. “Take” is the disturbance, displacement or killing of species. The Bald and Golden Eagle Protection Act of 1940 established both criminal and civil penalties for certain actions associated with harming, possessing or trading bald and golden eagles. The CWA regulates the water quality of discharges into the “waters of the United States,” which include wetlands and perennial and intermittent stream channels. Under Section 404 of the CWA, the US Army Corps of Engineers is authorized to set standards and issue permits related to such discharges. Lastly, the Rivers and Harbors Act regulates activities in navigable waters and improvements in harbors and
rivers. Under the Act, navigable water may not be obstructed or altered without authorization.

Relevant State regulations and agencies include the Z'berg-Nejedly Forest Practice Act, Oak Woodlands Conservation Act, California Endangered Species Act (CESA), California Fish and Game Code and San Francisco Bay Conservation and Development Commission. The Z'berg-Nejedly Forest Practice Act established the Forest Practice Rules, which apply to forest management activities to ensure that such activities preserve and protect fish, wildlife, forests and streams. The Oak Woodlands Conservation Act (State Senate Bill 1334) was enacted in 2005 and added to CEQA statutes. The statute requires counties to determine whether a project will have a significant impact on oak woodlands and, if so, require certain identified mitigation measures. CESA is administered by the California Department of Fish and Game and pertains to wildlife and plant species. The California Fish and Game Code prohibits the take of protected species. The San Francisco Bay Conservation and Development Commission (BCDC) is comprised of 27 members representing various interests in the San Francisco Bay area. The BCDC is authorized to control the filling and dredging of the Bay, as well as shoreline development related to the Bay. Many of the areas protected by the BCDC, such as the Napa River, wetlands and tidal marshes, provide potential habitat for biological resources.

Relevant local policies are contained in the Napa County Code. County Code Chapter 18.108 contains the County’s Conservation Regulations which protect lands from soil loss and protect the water quality of the county’s streams and waterways by minimizing the soil erosion associated with earth-moving, land disturbing and grading. Chapter 16.04 (Floodplain Management) regulates the alteration of natural floodplains, stream channels and natural protective barriers to preserve riparian habitats, reduce erosion, maintain water temperatures, prevent siltation and promote woodland and wildlife conservation.
This section contains updated policy information pertaining to the Napa County General Plan.

1. **Napa County General Plan**
   The Conservation Element of the Napa County General Plan contains the following policies pertaining to biological resources.

**Policy CON-15:** The County shall establish and update management plans protecting and enhancing the County’s biodiversity and identify threats to biological resources within appropriate evaluation areas, and shall use those plans to create programs to protect and enhance biological resources and to inform mitigation measures resulting from development projects.

**Policy CON-16:** The County shall require a biological resources evaluation for discretionary projects in areas identified to contain or potentially contain special-status species based upon data provided in the Baseline Data Report (BDR), California Natural Diversity Database (CNDDB), or other technical materials. This evaluation shall be conducted prior to the approval of any earthmoving activities. The County shall also encourage the development of programs to protect special-status species and disseminate updated information to state and federal resource agencies.

**Policy CON-17:** Preserve and protect native grasslands, serpentine grasslands, mixed serpentine chaparral, and other sensitive biotic communities and habitats of limited distribution. The County, in its discretion, shall require mitigation that results in the following standards:
   a. Prevent removal or disturbance of sensitive natural plant communities that contain special-status plant species or provide critical habitat to special-status animal species.
   b. In other areas, avoid disturbances to or removal of sensitive natural plant communities and mitigate potentially significant impacts where avoidance is infeasible.
   c. Promote protection from overgrazing and other destructive activities.
d. Encourage scientific study and require monitoring and active management where biotic communities and habitats of limited distribution or sensitive natural plant communities are threatened by the spread of invasive non-native species.

e. Require no net loss of sensitive biotic communities and habitats of limited distribution through avoidance, restoration, or replacement where feasible. Where avoidance, restoration, or replacement is not feasible, preserve like habitat at a 2:1 ratio or greater within Napa County to avoid significant cumulative loss of valuable habitats.

**Policy CON-18:** To reduce impacts on habitat conservation and connectivity:

a. In sensitive domestic water supply drainages where new development is required to retain between 40 and 60 percent of the existing (as of June 16, 1993) vegetation onsite, the vegetation selected for retention should be in areas designed to maximize habitat value and connectivity.

b. Outside of sensitive domestic water supply drainages, streamlined permitting procedures should be instituted for new vineyard projects that voluntarily retain valuable habitat and connectivity, including generous setbacks from streams and buffers around ecologically sensitive areas.

c. Preservation of habitat and connectivity of adequate size, quality, and configuration to support special-status species should be required within the project area. The size of habitat and connectivity to be preserved shall be determined based on the specifics needs of the species.

d. The County shall require discretionary projects to retain movement corridors of adequate size and habitat quality to allow for continued wildlife use based on the needs of the species occupying the habitat.

e. The County shall require new vineyard development to be designed to minimize the reduction of wildlife movement to the maximum extent feasible. In the event the County concludes that such development will have a significant impact on wildlife movement, the County may require the applicant to relocate or remove existing perimeter fencing installed on or after February 16, 2007 to offset the impact caused by the new vineyard development.
f. The County shall disseminate information about impacts that fencing has on wildlife movement in wild land areas of the County and encourage property owners to use permeable fencing.

g. The County shall develop a program to improve and continually update its database of biological information, including identifying threats to wildlife habitat and barriers to wildlife movement.

h. Support public acquisition, conservation easements, in-lieu fees where on-site mitigation is infeasible, and/or other measures to ensure long-term protection of wildlife movement areas.

**Policy CON-24:** Maintain and improve oak woodland habitat to provide for slope stabilization, soil protection, species diversity, and wildlife habitat through appropriate measures including one or more of the following:

a. Preserve, to the extent feasible, oak trees and other significant vegetation that occur near the heads of drainages or depressions to maintain diversity of vegetation type and wildlife habitat as part of agricultural projects.

b. Comply with the Oak Woodlands Preservation Act (PRC Section 21083.4) regarding oak woodland preservation to conserve the integrity and diversity of oak woodlands, and retain, to the maximum extent feasible, existing oak woodland and chaparral communities and other significant vegetation as part of residential, commercial, and industrial approvals.

c. Provide replacement of lost oak woodlands or preservation of like habitat at a 2:1 ratio when retention of existing vegetation is found to be infeasible. Removal of oak species limited in distribution shall be avoided to the maximum extent feasible.

d. Support hardwood cutting criteria that require retention of adequate stands of oak trees sufficient for wildlife, slope stabilization, soil protection, and soil production be left standing.

e. Maintain, to the extent feasible, a mixture of oak species which is needed to ensure acorn production. Black, canyon, live, and brewer oaks as well as blue, white, scrub, and live oaks are common associations.
f. Encourage and support the County Agricultural Commission’s enforcement of state and federal regulations concerning Sudden Oak Death and similar future threats to woodlands.

**Policy CON-28:** To offset possible additional losses of riparian woodland due to discretionary development projects and conversions, developers shall provide and maintain similar quality and quantity of replacement habitat or in-kind funds to an approved riparian woodland habitat improvement and acquisition fund in Napa County. While on-site replacement is preferred where feasible, replacement habitat may be either on-site or off-site as approved by the County.

**Policy CON-30:** All public and private projects shall avoid impacts to wetlands to the extent feasible. If avoidance is not feasible, projects shall mitigate impacts to wetlands consistent with state and federal policies providing for no net loss of wetland function.

**B. Existing Conditions**

Section 4.5.1 of the 2007 Napa County General Plan Draft EIR contains a detailed description of the existing biological resource conditions in Napa County, including conditions pertaining to biotic communities, sensitive natural communities, special-status species and other important ecological features.

Napa County has a rich diversity of biological communities. There are six distinct biological communities in Napa County: oak woodlands, grasslands, mixed serpentine chaparral, mixed willow riparian forests, redwood forests and vernal pools. Oak woodlands are Napa’s most significant biological community, spanning over 167,450 acres, or 33 percent of the entire county. Napa County has the highest density of oak woodlands in California.

Each of these biological communities supports a unique distribution of flora and fauna. The coniferous forests in northwest Napa County provide habitat
for the northern spotted owl, and the baylands of the southern county are home to over 130 species of birds, including the endangered California clapper rail. The rivers, creeks and streams of Napa’s watersheds provide habitat for many species of plants, fish, invertebrates and amphibians, including the threatened California red-legged frog.

Napa has well-preserved habitats, which are home to many special-status species. Sixty special-status wildlife species are likely to be found in the county. Of these 60 species, 39 are birds, eleven are mammals, five are invertebrates, three are amphibians, and two are reptiles. These 60 species are considered “likely” because only 22 of them have documented occurrences in the county; however, habitat for all 60 species is present in the county and they are considered by experts as likely to occur. Eighty-one special-status plant species are likely to occur in Napa County. Seventy-eight species have been observed, while suitable habitat exists for the remaining three. Of these 81 plants, 73 are forbs (i.e. broad-leaved herbaceous plants), six are shrubs, one is a grass, and one is a tree.

In addition to their natural beauty and habitat value, biological communities provide important ecological functions, such as erosion control and water quality enhancement. These biological functions are threatened by human impacts from development. As urban and agricultural development spreads throughout Napa County, biological communities suffer from habitat destruction and fragmentation, hydrologic modifications, overgrazing, wildlife exclusion fencing, disease and competition from non-native species.

C. Standards of Significance

A biological resource impact is considered significant if implementation of the Housing Element would result in any of the following:

1. Substantial adverse effect, either directly or indirectly through habitat modifications, on a special-status plant or animal species identified,
tracked or listed in local or regional plans, policies or regulations, or by CDFG, USFWS or NOAA Fisheries;

2. Substantial adverse effect on any wetlands, riparian habitat or other sensitive biotic community or native habitat, such as the Napa River, identified in local or regional plans, policies or regulations, or by CDFG or USFWS;

3. Substantial interference with the movement of any native resident or wildlife species, interference with established native resident or migratory wildlife corridors, or impedance of the use of native wildlife nursery sites;

4. Conflict with any adopted Habitat Conservation Plan, recovery plan, natural community conservation plan, local ordinance or other approved local, regional or State plans and policies intended to protect biological resources; or

5. Reduction in the number of or restriction in the range of an endangered, rare or threatened plant or animal species or biotic community, thereby causing the species or community to drop below self-sustaining levels.

D. Impact Discussion

This section discusses the potential impacts to Napa County’s biological resources as a result of the policies, programs and implementation of the proposed Housing Element. For each standard of significance, impacts are discussed separately in relation to the proposed Housing Element’s programs and housing sites.

1. Adverse Effect on Special-Status Plant or Animal Species

a. Programs and Policies

The proposed Housing Element Update includes goals, objectives, policies and programs to assist the County in assessing housing needs, providing housing directly, and facilitating the construction of needed units. Through the implementation of programs, the County proposes to accommodate up to 153 units. These programs include second unit production and second units
on parcels zoned Agricultural Preserve, farm worker housing production, 
density bonus for mobile home parks with planned development zoning, ac-
 cessory units on parcels zoned Commercial Limited (CL) or Commercial 
Neighborhood (CN) and redesignations in the Monticello Road Rural Resi-
dential area.

Aside from the program to redesignate the Monticello Road Rural Residential 
area, the programs and policies of the proposed Housing Element do not 
specify site-specific locations for new housing units. It can be expected that 
these future housing units would be scattered throughout the county. New 
units developed under programs encouraging second units, farmworker hous-
ing, mobile home parks and units on commercially-zoned parcels would most 
likely be constructed on parcels that are already developed with residential 
buildings, commercial buildings, or intensive agriculture, where special-status 
plant and animal species are less likely to occur.

Development projects proposed under the programs of the proposed Housing 
Element would be required to comply with both the federal and California 
Endangered Species Act (ESA). Both the federal and State ESA protect en-
dangered and threatened wildlife species and their habitats. In addition, all 
zoning districts and all development that involves earthmoving on slopes of 
greater than 5 percent is required to comply with the County’s Conservation 
Regulations (Napa County Code 18.108). The Conservation Regulations seek 
to further the intent of Fish and Game Code Section 1600, which is intended 
to conserve fish and wildlife resources, and they ensure that sensitive riparian 
areas will be avoided. The Conservation Regulations also include setback 
requirements that prohibit vegetation removal along streams and require 
vegetation retention if necessary for erosion control or the preservation of 
threatened or endangered plant or animal habitats. Compliance with the fed-
eral and State ESA requirements and the Conservation Regulations will en-
sure that biological resource impacts associated with the programs and polices 
of the proposed Housing Element would be less than significant.
In addition, individual development projects proposed under three of the programs in the proposed Housing Element – the density bonus for mobile home parks, accessory units on Commercial Limited/Commercial Neighborhood parcels and redesignations in the Monticello Road Rural Residential Area programs – would be subject to discretionary review from the County (i.e. use permits or rezoning). Therefore, development projects under these programs would be subject to additional review for compliance with General Plan policies and other regulations, including the Conservation Element of the Napa County General Plan and CEQA.

Several policies in the Napa County General Plan’s Conservation Element reduce the likelihood of impacts to special-status species from development of housing under these three programs. Policies CON-16 and CON-17 require a biological resources evaluation and mitigation measures for discretionary projects located in an area known to contain, or with potential to contain, special-status species. Under Policy CON-17, the County seeks to prevent the removal or disturbance of sensitive natural plant communities that contain special-status plant species or provide critical habitat to special-status animal species. Under Policy CON-30, new development is required to either avoid wetlands or provide wetland mitigation according to State and federal policies.

CEQA requires environmental review of discretionary housing development projects that would be built under these three programs. This environmental review would include a site-specific biological resources assessment for individual projects. Compliance with the policies of Napa County’s General Plan and the required environmental review process would further ensure that biological resource impacts from discretionary projects under proposed programs would be avoided or reduced to less than significant.

b. Housing Sites
i. Angwin
Development on the Angwin sites could potentially impact special-status plant and aquatic animal populations, and nesting special-status birds or raptors.
There is a low potential for occurrence of special-status plant species on Site A because of existing development, and a low to moderate potential for such occurrence on Site B given its land cover (vegetation) types. Several special-status plant species have been reported within 1 mile of Site B, including Mt. Diablo cottonweed, green coyote mint, Gairdner’s yampah, marsh checker-bloom, and Hernandez bluecurl.1 Detailed surveys on both sites during the flowering period would be necessary to provide a confirmation on presence or absence.

On Site A, there is a perennial stream located at the western edge of the site with native riparian vegetation. This riparian vegetation is dominated by native willow, big-leaf maple, Oregon ash, valley oak, California buckeye and California bay. This community also includes both native (e.g., poison oak, snowberry and wild grape) and non-native (e.g., Himalayan blackberry, English ivy and periwinkle) understory vegetation. This riparian corridor provides important terrestrial and aquatic habitat for wildlife, and may support special-status species associated with creeks in Napa County, including foothill yellow-legged frog, California red-legged frog, western pond turtle, steelhead, and California freshwater shrimp, as well as possible nesting by Cooper’s hawk, sharp-shinned hawk, and other raptors.2 Detailed surveys would be necessary to confirm presence or absence of special-status animal species along the riparian corridor. Site B is not considered to have suitable habitat for other special-status animal species due to the lack of essential characteristics such as aquatic habitat or vernal pools.

Native oak woodland and mixed evergreen forest occur on both Sites A and B, which provide potential nesting and roosting substrate for a number of

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1 County of Napa, Napa County Housing Element Update and Zoning Amendments Draft Environmental Assessment, September, 2004, pages 146 through 148.

2 County of Napa, Napa County Housing Element Update and Zoning Amendments Draft Environmental Assessment, September, 2004, pages 141 through 145.
birds, including raptors, although no active nests were encountered during the field reconnaissance. Because there is a possibility that new nests could be established in the future, pre-construction surveys would be necessary to confirm absence of any nesting by bird species of concern.

Although the Angwin sites have been extensively altered by past development for agricultural, residential and institutional uses, these sites may contain special-status plant species, and they contain habitat that could support other special-status species. Therefore, housing development on the Angwin sites could have a significant impact requiring mitigation.

**ii. Moskowitz Corner**

Possible impacts or loss of special-status plant populations could occur on all of the Moskowitz Corner sites, Sites A and B have been disturbed by grazing and possibly agricultural production in the past, but there remains a moderate potential for the occurrence of special-status plant species. Sites C and D also have a moderate potential for occurrence of special-status plant species, as there is an occurrence of Brewer’s western flax reported near these sites. Detailed surveys during the flowering period would be necessary to provide a confirmation of presence or absence of any special-status plant species.

Segments of Oak Moss Creek, which borders the eastern edge of Sites A and B, may support steelhead, western pond turtle, foothill yellow-legged frog, and possibly California red-legged frog, but the creek is not located on the site, and movement onto the site appears unlikely even during the wet season.

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Site C contains a stock pond with small ephemeral drainages, as well as a larger intermittent drainage that flows into the pond. A large population of introduced bullfrog occurs in the pond. This species is voracious and limits the suitability of the pond for native amphibians and fish species, including the California red-legged frog. The stock pond also provides suitable habitat for western pond turtle, although no individuals were detected during the field survey.\textsuperscript{5}

No evidence of nesting by special-status bird species or raptors was observed on any of the sites during the field reconnaissance,\textsuperscript{6} but there is a possibility that new nests could be established in the future.\textsuperscript{7} Pre-construction surveys would be necessary to confirm absence of any nesting by bird species of concern.

Because the Moskowite Corner sites may contain special-status plant species, and because they contain habitat that could support other special-status species, housing development on these sites could have a significant impact requiring mitigation.

iii. Spanish Flat
Although Spanish Flat Site A contains grassland, it is not native. No special-status plant or animal species are suspected to occur due to lack of native cover and the absence of sensitive natural communities.\textsuperscript{8} Therefore, devel-

\footnotesize{\textsuperscript{5} County of Napa, \textit{Napa County Housing Element Update and Zoning Amendments Draft Environmental Assessment}, September, 2004, pages 152 through 158.}
\footnotesize{\textsuperscript{6} Field reconnaissance was conducted by Environmental Collaborative on July 13, 2004.}
\footnotesize{\textsuperscript{7} County of Napa, \textit{Napa County Housing Element Update and Zoning Amendments Draft Environmental Assessment}, September, 2004, pages 152 through 158.}
\footnotesize{\textsuperscript{8} County of Napa, \textit{Napa County Housing Element Update and Zoning Amendments Draft Environmental Assessment}, September, 2004, page 159.}
Development on this site would have a *less-than-significant* impact on special-status species.

Sites B, D, E and F are considered to have a low to moderate potential for occurrence of any special-status plant species, but detailed surveys during the flowering period would be necessary to provide a confirmation on presence or absence in areas with relatively undisturbed cover. Site C contains a drainage that could support aquatic special-status animal species. Site D contains a freshwater marsh, which could provide habitat for California red-legged frog, and Site F contains an intermittent stream, which could provide suitable habitat for foothill yellow-legged frog and western pond turtle. Detailed surveys would be required to determine whether these species occur in the marsh and along the drainage. Suitable habitat for other special-status animal species is considered absent on the sites due to the lack of essential characteristics such as aquatic habitat or vernal pools.9

Sites B, D, E and F contain oak and other woodland types, which provide potential nesting and roosting substrate for a number of birds, including raptors, although no active nests were encountered during the field reconnaissance.10 Because of a possibility that new nests could be established in the future, pre-construction surveys would be necessary to confirm absence of any nesting by bird species of concern.

Although much of the Spanish Flat sites have been extensively altered by past development, Sites B, C, D, E and F may contain special-status species or habitat that could support special-status species. Therefore, housing development on Spanish Flat Sites B, C, D, E and F could have a *significant* impact requiring mitigation.

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10 Field reconnaissance was conducted by Environmental Collaborative on July 13, 2004.
iv. Napa Pipe

No special-status plant species have been observed on the Napa Pipe sites. There is little suitable habitat due to existing levels of disturbance and the dominance by non-native species.\textsuperscript{11} Some special-status animal species have been observed in the vicinity of the Napa Pipe sites and in the Napa River, but no such species have been observed on the sites themselves.\textsuperscript{12} Portions of the Napa Pipe sites contain wetland areas and areas dense with cattail and pickleweed that could provide suitable nesting habitat for the tricolored blackbird, northern harrier, California black rail, saltmarsh yellowthroat and San Pablo song sparrow.\textsuperscript{13} In addition, there are potential nesting sites for special-status bird species or raptors in a stand of eucalyptus trees that border the study areas, as well as in some of the planted trees. Because the Napa Pipe sites contain potential habitat for special-status species, housing development on these sites could cause a \textit{significant} impact requiring mitigation.

2. Adverse Effect on Sensitive Biotic Communities or Native Habitat

a. Programs and Policies

Aside from the program to redesignate the Monticello Road Rural Residential area, the programs and policies of the proposed Housing Element do not specify exact locations for new housing units. It can be expected that these future housing units would be scattered throughout the county. New units developed under programs encouraging second units, farmworker housing, mobile home parks and units on commercially-zoned parcels would most likely be constructed on parcels that are already developed with residential buildings, commercial buildings, or intensive agriculture, where sensitive habitats are less likely to occur.


As stated in Section D.1.a above, development projects proposed under the programs of the Housing Element would be required to comply with both the federal and California ESA. In addition, all zoning districts and all development involving earthmoving is required to comply with the County’s Conservation Regulations, which protect sensitive riparian areas and require setbacks along perennial and intermittent streams. The Conservation Regulations also require construction activities under the auspices of a public agency to preserve and restore existing habitat areas. Compliance with the federal and State ESA and the County’s Conservation Regulation requirements will ensure that potential impacts on sensitive habitats and communities will be reduced to less-than-significant levels.

In addition, individual development projects proposed under three of the programs in the proposed Housing Element – the density bonus for mobile home parks, accessory units on Commercial Limited/Commercial Neighborhood parcels and redesignations in the Monticello Road Rural Residential Area programs – would be subject to discretionary review from the County. Therefore, development projects under these programs would be subject to additional review for compliance with General Plan policies and other regulations, including the Conservation Element of the Napa County General Plan and CEQA.

Several policies in the Napa County General Plan’s Conservation Element reduce the likelihood of impacts to sensitive habitats or communities from occurring from development of housing under these three programs. Policies CON-17 and CON-24 require measures to prevent disturbances to and removal of sensitive habitat and communities. In addition, Policy CON-18 seeks to reduce impacts to habitat conservation and connectivity by requiring the use of vegetation that maximizes habitat value and connectivity and requiring the preservation of existing habitat corridors. Policy CON-28 requires that replacement habitat or in-kind funds be provided to offset possible losses of riparian woodland habitat. Under Policy CON-30, new development is required to either avoid wetlands or provide wetland mitigation according to State and federal policies.
Under CEQA, environmental review would be required for discretionary housing development projects under these three programs, including a site-specific biological resources assessment for individual projects. Compliance with the policies of Napa County’s General Plan and the required environmental review process would further ensure that impacts to sensitive habitats from discretionary projects under proposed programs and would be avoided.

b. Housing Sites

i. Angwin
Development on the Angwin sites could potentially impact sensitive habitats. There is potential for adverse affects to sensitive habitats on Site A, where natural plant communities include wetland species, riparian scrub and forest, valley oak woodland, specimen valley oaks, and other deciduous oak woodlands. Protection is necessary for deciduous oak woodlands, which provide high value habitat for wildlife. Oaks, like many native trees, are susceptible to damage from grading and compaction in the tree root zone and changes in surface drainage, and therefore are particularly threatened by development. Site B also contains oak woodland and other forest habitat. Damage to these sensitive habitats and communities would constitute a significant impact on biological resources requiring mitigation.

ii. Moskowite Corner
Development on the Moskowite Corner sites could potentially impact sensitive habitats. All of the Moskowike Corner sites contain wetland species, valley oak woodland, specimen valley oaks, and/or other deciduous oak woodlands. Additionally, there is riparian habitat located on Sites A, B and C. Damage to these sensitive habitats and communities would constitute a significant impact on biological resources.

iii. Spanish Flat
No sensitive habitats or communities occur on Site A due to the extent of past disturbance. Therefore, development on this site would have a less-than-significant impact on sensitive habitats and communities.
Spanish Flat Sites B, C, E and F contain wetland species, valley oak woodland, specimen valley oaks, and/or other deciduous oak woodlands. Additionally, there is riparian habitat located on Sites D and F. Damage to these sensitive habitats and communities would constitute a significant impact on biological resources requiring mitigation.

**iv. Napa Pipe**

Portions of the Napa Pipe sites contain wetland areas and areas dense with cattail and pickleweed that could provide suitable nesting habitat for the tricolored blackbird, Swainson’s hawk, northern harrier, California black rail, saltmarsh yellowthroat and San Pablo song sparrow.\(^\text{14}\) Damage to these sensitive habitat areas would constitute a significant impact on biological resources requiring mitigation.

3. **Interference with Wildlife Movement**

a. **Programs and Policies**

Aside from the program to redesignate the Monticello Road Rural Residential area, the programs and policies of the proposed Housing Element do not specify exact locations for new housing units. It can be expected that these future housing units would be scattered throughout the county. New units developed under programs encouraging second units, farmworker housing, mobile home parks and units on commercially-zoned parcels would most likely be constructed on parcels that are already developed with residential buildings, commercial buildings, or intensive agriculture, where major wildlife movement corridors are unlikely to occur.

As stated in Section D.1.a above, development projects proposed under the programs of the proposed Housing Element would be required to comply with both the federal and California ESA, and the County’s Conservation Regulations. The Conservation Regulations include provisions that construction fencing can be required to be installed in a way that protects wildlife cor-

ridors. Compliance with the federal and State ESA and Conservation Regulation requirements will ensure that potential wildlife movement impacts associated with programs would be reduced to less-than-significant levels.

In addition, individual development projects proposed under three of the programs in the proposed Housing Element – the density bonus for mobile home parks, accessory units on Commercial Limited/Commercial Neighborhood parcels and redesignations in the Monticello Road Rural Residential Area programs – would be subject to discretionary review from the County. Therefore, development projects under these programs would be subject to additional review for compliance with General Plan policies and other regulations, including the Conservation Element of the Napa County General Plan and CEQA.

The Napa County General Plan’s Conservation Element reduces the likelihood of impacts to species movement from housing development under these three programs. Specifically, Policy CON-18(d) states that the County will require that discretionary projects retain movement corridors to allow for continued wildlife use.

Under CEQA, environmental review would be required for discretionary housing development projects under these three programs, including a site-specific biological resources assessment for individual projects. Compliance with the policies of Napa County’s General Plan and the required environmental review process would further ensure that impacts to species movement from discretionary projects under proposed programs would be avoided.

b. Housing Sites
Proposed development on all of the housing sites that provide important habitat discussed in Section D.1.b and D.2.b above could also result in the obstruction of species movement. This includes: possible removal of oak woodlands, riparian scrub and forest, and other areas of native vegetation with high wildlife habitat values; loss of aquatic habitat along streams,
ephemeral drainages, and seasonal wetlands; and destruction of sensitive nesting and roosting areas, possibly affecting a number of bird species. Therefore, development on Angwin Sites A and B, Moskowite Corner Sites A, B, C and D, Spanish Flat Sites B, C, D, E and F, and Napa Pipe Sites A and B could cause a significant impact on wildlife movement requiring mitigation.

Due to the extent of past disturbance and lack of native cover, Spanish Flat Site A does not contain important habitat, and development on this site would have a less-than-significant impact on species movement.

4. Conflict with Adopted Plans and Policies Intended to Protect Biological Resources
a. Programs and Policies
No landscape-level Habitat Conservation Plans or Natural Community Conservation Plans currently exist within Napa County. Applicable plans and policies include the Conservation Element of the Napa County General Plan and applicable plans issued by the Regional Water Quality Control Board (RWQCB), US Fish and Wildlife Service (USFWS) and Bureau of Land Management (BLM). The RWQCB is currently revising new sediment Total Maximum Daily Load standards for the Napa River to address water quality issues and improve habitat conditions. The RWQCB is expected to adopt these standards, which will then be sent to the State Water Resources Board for approval. The standards also include a habitat enhancement plan and an implementation plan. The USFWS has adopted several Recovery Plans for federally-listed species found within the county. Lastly, the BLM adopted the


Management Plan for Ukiah Region Public Lands in 2006, which includes portions of Napa County. Future development within the jurisdictions of these plans would be required to adhere to the policies and regulations contained in applicable plans.

New development would be required by federal, State and local regulations to comply with the applicable plans and policies described above, as well as with the federal and State ESA and the County’s Conservation Regulations. Moreover, as discussed in Sections D.1 and D.2, new units developed under programs encouraging second units, farmworker housing, mobile home parks and units on commercially-zoned parcels would most likely be constructed on parcels that are already developed with residential buildings, commercial buildings, or intensive agriculture. This is consistent with the fundamental goal of protecting biological resources. Therefore, impacts related to conflicts with adopted plans would be less than significant.

b. Housing Sites
Applicable plans and policies include the Conservation Element of the Napa County General Plan, the RWQCB’s Total Maximum Daily Load standards, the USFWS’s Recovery Plans and the BLM’s Management Plan for Ukiah Region Public Lands. Future development on housing sites that falls within the jurisdictions of these plans would be required to adhere to the policies and regulations contained in applicable plans. Future development on the housing sites has the potential to conflict with a number of policies in the Conservation Element, including policies to protect native vegetation, sensitive wildlife habitat and mature oaks. Therefore, development on Angwin Sites A and B, Moskowitz Corner Sites A, B, C and D, Spanish Flat Sites B, C, D, E and F, and Napa Pipe Sites A and B could cause a significant impact with regard to conflicts with adopted plans and policies intended to protect biological resources (see mitigation provided).

Due to the extent of past disturbance and lack of native cover, Spanish Flat Site A does not contain sensitive biological resources, so development on this
site would have a less-than-significant impact with regard to conflicts with adopted plans and policies intended to protect biological resources.

5. **Reduction in the Number or Range of Endangered, Rare or Threatened Species**

This section refers to the reduction in the number or range of endangered, rare or threatened species. Species that qualify as endangered, rare or threatened are otherwise known as special-status species. For a discussion of impacts to special-status species resulting from housing programs and sites proposed in the Housing Element Update, refer to Section D.1 of this section.

**E. Cumulative Impacts**

The 2007 Napa County General Plan EIR found one significant and unavoidable impact related to biological resources in Napa County:

- Land uses and development under the proposed General Plan Update could result in the loss of sensitive biotic communities and oak woodlands within the County.

Although mitigation measures resulted in General Plan policies that are protective of sensitive biotic communities and require a 2 to 1 ratio preservation when communities are lost, the Final EIR found this impact to be significant and unavoidable. Despite these measures to protect communities, some loss would be expected to occur where avoidance of habitat is found to be infeasible.

Housing construction on Angwin Sites A and B, Moskowite Corner Sites A, B, C and D, Spanish Flat Sites B, C, D, E and F, and Napa Pipe Sites A and B could contribute to this significant and unavoidable impact. These sites are known to contain sensitive natural habitats and communities. However, Mitigation Measure BIO-4 in Section F below would ensure that sensitive communities are mapped and avoided as development occurs under the proposed Housing Element. Therefore, the proposed project would not contrib-
ute to this significant and unavoidable impact from the 2007 General Plan EIR.

F. Impacts and Mitigation Measures

Impact BIO-1: Angwin Sites A and B, Moskowite Corner Sites A, B, C and D, and Spanish Flat Sites B, D, E and F may contain special-status plant species which, if extant, may be negatively affected by housing development.

Mitigation Measure BIO-1: Prior to issuance of a building permit for development on Angwin Sites A and B, Moskowite Corner Sites A, B, C and D, and Spanish Flat Sites B, D, E and F, the County shall ensure that the property owner or developer retains a qualified biologist to undertake confirmation surveys for special-status plant species. Detailed surveys shall be conducted during the flowering period by a qualified botanist to confirm absence of any special-status plant species from the vicinity of proposed improvements. The surveys shall be conducted consistent with the latest surveys guidelines of the CDFG, and include sufficient field surveys to allow for a determination on presence or absence. If populations of any special-status plant species are encountered on any site, housing development on the site shall be designed to avoid the identified populations in compliance with State and federal law.

Significance After Mitigation: Less than significant.

Impact BIO-2: Angwin Site A, Moskowite Corner Sites A, B and C, Spanish Flat Sites C, D and F and Napa Pipe Sites A and B may contain aquatic special-status animal species that could be affected by housing development.

Mitigation Measure BIO-6 from the 2004 Housing Element EA is not included in this Draft EIR. This mitigation measure is to conduct a wetland delineation and submit it to the Army Corps of Engineers for verification. This mitigation measure is intended to address a threshold regarding jurisdictional wetlands, which is not addressed in this Draft EIR.
Mitigation Measure BIO-2: Prior to issuance of a building permit for development on Angwin Site A, Moskowite Corner Sites A, B and C, Spanish Flat Sites C, D and F, and Napa Pipe Sites A and B, the County shall ensure that the property owner or developer retains a qualified biologist to undertake confirmation surveys for aquatic special-status animal species shall be conducted on the sites listed above. Detailed surveys shall be conducted by a qualified biologist to confirm absence of any aquatic special-status animal species from the vicinity of proposed improvements. This may include conduct of protocol surveys for California red-legged frog if development is proposed within 300 feet of potential breeding or dispersal habitat is present, which is possible on Angwin Site A, Moskowite Corner Sites A, B and C, and Spanish Flat Sites C and D. If populations of any aquatic special-status animal species are encountered on any site, housing development on the site shall be designed to avoid the identified populations and habitat in compliance with State and federal law.

Significance After Mitigation: Less than significant.

Impact BIO-3: Angwin Sites A and B, Moskowite Corner Sites A, B, C and D, Spanish Flat Sites B, D, E and F and Napa Pipe Sites A and B may contain nesting habitat for special-status bird species that could be affected by housing development.

Mitigation Measure BIO-3: Prior to issuance of a building permit for development on Angwin Sites A and B, Moskowite Corner Sites A, B, C and D, Spanish Flat Sites B, D, E and F, and Napa Pipe Sites A and B, the County shall ensure that the property owner or developer retains a qualified biologist to undertake pre-construction nesting surveys for special-status bird species shall be conducted on the sites listed above. The pre-construction nesting surveys shall be conducted for loggerhead shrike, burrowing owl, and tree nesting raptors at sites with a potential for nesting activity if earthmoving and construction is to be initiated during the months of April through August. The surveys shall be conducted by a
qualified biologist no more than 30 days prior to initiation of grading. If any special status raptor nests are found during pre-construction surveys, a 500-foot no-disturbance buffer will be created around the nest during the breeding season or until all young have fledged. If nests of other special status birds are found during pre-construction surveys, a 250-foot buffer zone will be created consistent with California Department of Fish and Game avoidance guidelines. If pre-construction surveys determine that special status species are absent, no further mitigation is required. If construction activities are suspended for more than two weeks, the area must be resurveyed.

Significance After Mitigation: Less than significant.

Impact BIO-4: On Angwin Sites A and B, Moskowite Corner Sites A, B, C and D, Spanish Flat Sites B, C, D, E and F, and Napa Pipe Sites A and B, proposed development could affect sensitive habitats or natural communities unless they are adequately protected.

Mitigation Measure BIO-4: Prior to issuance of a building permit for development on Angwin Sites A and B, Moskowite Corner Sites A, B, C and D, Spanish Flat Sites B, C, D, E and F, and Napa Pipe Sites A and B, the County shall ensure that the property owner or developer retains a qualified biologist to accurately map locations supporting sensitive habitats and natural communities and that development plans for individual sites, and construction on these sites, avoids these locations. If sensitive habitats and natural communities include wetlands, off-site restoration with approval from the US Army Corps of Engineers may occur in place of avoiding development on wetlands.

Significance After Mitigation: Less than significant.

Impact BIO-5: Proposed development on Angwin Sites A and B, Moskowite Corner Sites A, B, C and D, Spanish Flat Sites B, C, D, E and F, and Napa
Pipe Sites A and B could result in the obstruction of wildlife movement corridors.

**Mitigation Measure BIO-5:** Prior to issuance of a building permit for development on Angwin Sites A and B, Moskowite Corner Sites A, B, C and D, Spanish Flat Sites B, C, D, E and F, and Napa Pipe Sites A and B, the County shall ensure that the property owner or developer retains a qualified biologist to survey possible wildlife movement corridors. If native resident or migratory wildlife corridors are found to be used on the site, measures to minimize restricted wildlife movement shall be developed in consultation with a qualified biologist, such as development and fencing restrictions, road design and use of critter culverts. In addition, measures shall be tailored to the needs of the species that are found to use the corridor.

**Significance After Mitigation:** *Less than significant.*

**Impact BIO-6:** Proposed development on Angwin Sites A and B, Moskowite Corner Sites A, B, C and D, Spanish Flat Sites B, C, D, E and F, and Napa Pipe Sites A and B could conflict with a number of policies in the Conservation Element intended to protect biological resources, including policies to protect native vegetation, sensitive wildlife habitat and mature oaks.

This impact will be mitigated to a less-than-significant level by the implementation of Mitigation Measures BIO-1, BIO-2, BIO-3, BIO-4 and BIO-5, above. No new mitigation measure is required.
This chapter describes the potential effects of the proposed Housing Element on fisheries and special-status fish species. All relevant information related to the regulatory framework and existing conditions identified in Chapter 4.6 of the 2007 Napa County General Plan Draft EIR is incorporated by reference and briefly summarized. New and updated information pertaining to fishery regulations and existing conditions is also included.

A. Regulatory and Policy Framework

Section 4.6.2 of the 2007 Napa County General Plan Draft EIR contains a detailed description of the regulatory framework related to fisheries in the project area that includes federal, State and local regulations and policies.

The federal regulations that pertain to fisheries and special-status fish species include the Endangered Species Act (ESA), Clean Water Act (CWA) and Rivers and Harbors Act of 1899. Under the ESA, the US Fish and Wildlife Service and National Oceanic and Atmospheric Administration National Marine Fisheries Service identify endangered and threatened fish and wildlife species. These identified species and their habitats are protected by the ESA. The CWA regulates the water quality of discharges into the “waters of the United States,” which include wetlands and perennial and intermittent stream channels. Under the Section 404 of the CWA, the US Army Corps of Engineers is authorized to set standards and issue permits related to such discharges. The Rivers and Harbors Act regulates activities in navigable waters and improvements in harbors and rivers. Under the Act, navigable water may not be obstructed or altered without authorization.

Relevant State regulations and regulatory bodies include the California Endangered Species Act (CESA), California Fish and Game Code, and San Francisco Bay Conservation and Development Commission (BCDC). Like the ESA, CESA protects endangered and threatened species. CESA is administered by the California Department of Fish and Game and pertains to wildlife and plant species. The California Fish and Game Code protects the “take” of protected species. “Take” is the disturbance, displacement or killing of spe-
cies. The BCDC is comprised of 27 members representing various interests in the San Francisco Bay area. The BCDC is authorized to control the filling and dredging of the Bay, as well as shoreline development related to the Bay. The BCDC’s primary responsibility is to implement the San Francisco Bay Plan, which seeks to protect the Bay and enhance its shoreline.

The relevant local regulations are contained in the Napa County Code. County Code Chapter 18.100 (Erosion Hazard Areas; Vegetation Preservation and Management) requires permit conditions on slopes greater than five percent to preserve existing vegetation and threatened plant and animal species. County Code Chapter 18.108 contains several conservation regulations that protect lands from soil loss and protect the water quality of the county’s streams and waterways by minimizing the soil erosion associated with earth-moving, land disturbing and grading. Chapter 16.04 (Floodplain Management) regulates the alteration of natural floodplains, stream channels and natural protective barriers to preserve riparian habitats, reduce erosion, maintain water temperatures, prevent siltation and promote woodland and wildlife conservation. County Code Chapter 16.28 (Stormwater Management Discharge Control) protects water resources and improves water quality by using best management practices; enforcing the Clean Water Act, Porter-Cologne Water Quality Act and Basin Plan; and reducing stormwater pollutants.

Please also see Chapters 4.5 (Biological Resources) and 4.11 (Hydrology and Water Quality) for additional regulatory information applicable to fisheries, including the Regional Water Quality Control Board (RWQCB) and information about the status of the Total Maximum Daily Load (TMDL) measures. This section contains updated policy information pertaining to the Napa County General Plan and the Napa County Stormwater Ordinance (County Code Chapter 16.28).

1. **Napa County General Plan**

   The Conservation Element of the Napa County General Plan contains the following goals and policies related to fisheries.
Policy CON-10: The County shall conserve and improve fisheries and wildlife habitat in cooperation with governmental agencies, private associations and individuals in Napa County.

Policy CON-11: The County shall maintain and improve fisheries habitat through a variety of appropriate measures, including the following as well as best management practices developed over time:

a. Consider the feasibility of using reclaimed wastewater as a means of maintaining adequate water flow to support fish life and reduce pollution of the Napa River.

b. Consider all feasible ways to maintain and restore sufficient flows and channel characteristics necessary for fish passage consistent with state and federal guidelines.

c. Undertake and publicize water use conservation strategies necessary to protect and prolong the duration of in-stream flows for aquatic resources including migrating anadromous fish such as steelhead and Chinook salmon.

d. Encourage and support programs and efforts related to fishery habitat restoration and improvement including steelhead presence surveys, development and utilization of hydraulic modeling, and removal of fish barriers.

e. Manage the removal of invasive vegetation and the retention of other riparian vegetation to reduce the potential for increased water temperatures and siltation and to improve fishery habitat.

f. Pursue consolidated and streamlined regulatory review of fisheries and wildlife habitat restoration projects.

g. Encourage the retention of large woody debris in streams to the extent consistent with flood control considerations.

h. Encourage the use of effective vegetated buffers between urban runoff and local storm drains.

i. Promote and support forest management efforts and fire reduction practices in coordination with the California Department of Forestry and Fire Protection that reduce fuel loads and provide protection for water quality and fish habitat.
Require mitigation of gravel removal activities so they result in no net adverse effects to streambed attributes, temperature, habitat, and water quality necessary for native fisheries health. This may include restoration and improvement of impacted areas (e.g. gravel areas and pools and woody-debris areas). Gravel removal that results in adverse impacts to native fisheries shall be determined to have a significant impact under CEQA.

Implement sediment reduction measures in sand and gravel operations and other high sediment-producing land uses.

Control gravel removal and degradation from stream beds to minimize the adverse effects upon the spawning and feeding areas of fish.

Control sediment production from mines, roads, development projects, agricultural activities, and other potential sediment sources.

Implement road construction and maintenance practices to minimize bank failure and sediment delivery to streams.

Enforce boat speed limits to reduce damage to warm water game fish fisheries.

**Policy CON-13:** The County shall require that all discretionary residential, commercial, industrial, recreational, agricultural, and water development projects consider and address impacts to wildlife habitat and avoid impacts to fisheries and habitat supporting special-status species to the extent feasible. Where impacts to wildlife and special-status species cannot be avoided, projects shall include effective mitigation measures and management plans including provisions to:

a. Maintain the following essentials for fish and wildlife resources:
   1. Sufficient dissolved oxygen in the water.
   2. Adequate amounts of proper food.
   3. Adequate amounts of feeding, escape, and nesting habitat.
   4. Proper temperature through maintenance and enhancement of streamside vegetation, volume of flows, and velocity of water.

b. Ensure that water development projects provide an adequate release flow of water to preserve fish populations.
c. Employ supplemental planting and maintenance of grasses, shrubs and trees of like quality and quantity to provide adequate vegetation cover to enhance water quality, minimize sedimentation and soil transport, and provide adequate shelter and food for wildlife and special-status species and maintain the watersheds, especially stream side areas, in good condition.

d. Provide protection for habitat supporting special-status species through buffering or other means.

e. Provide replacement habitat of like quantity and quality on- or off-site for special status species to mitigate impacts to special-status species.

f. Enhance existing habitat values, particularly for special-status species, through restoration and replanting of native plant species as part of discretionary permit review and approval.

g. Require temporary or permanent buffers of adequate size (based on the requirements of the subject special-status species) to avoid nest abandonment by birds and raptors associated with construction and site development activities.

h. Demonstrate compliance with applicable provisions and regulations of recovery plans for federally listed species.

**Policy CON-14:** To offset possible losses of fishery and riparian habitat due to discretionary development projects, developers shall be responsible for mitigation when avoidance of impacts is determined to be infeasible. Such mitigation measures may include providing and permanently maintaining similar quality and quantity habitat within Napa County, enhancing existing riparian habitat, or paying in-kind funds to an approved fishery and riparian habitat improvement and acquisition fund. Replacement habitat may occur either on-site or at approved off-site locations, but preference shall be given to on-site replacement.

**Policy CON-26:** Consistent with Napa County’s Conservation Regulations, natural vegetation retention areas along perennial and intermittent streams shall vary in width with steepness of the terrain, the nature of the undercover, and type of soil. The design and management of natural vegetation areas shall
consider habitat and water quality needs, including the needs of native fish and special status species and flood protection where appropriate. Site-specific setbacks shall be established in coordination with Regional Water Quality Control Boards, California Department of Fish and Game, U.S. Fish and Wildlife Service, National Oceanic and Atmospheric Administration National Marine Fisheries Service, and other coordinating resource agencies that identify essential stream and stream reaches necessary for the health of populations of native fisheries and other sensitive aquatic organisms within the county’s watersheds.

Where avoidance of impacts to riparian habitat is infeasible along stream reaches, appropriate measures will be undertaken to ensure that protection, restoration, and enhancement activities will occur within these identified stream reaches that support or could support native fisheries and other sensitive aquatic organisms to ensure a no net loss of aquatic habitat functions and values within the county’s watersheds.

**Policy CON-27:** The County shall enforce compliance and continued implementation of the intermittent and perennial stream setback requirements set forth in existing stream setback regulations, provide education and information regarding the importance of stream setbacks and the active management and enhancement/restoration of native vegetation within setbacks, and develop incentives to encourage greater stream setbacks where appropriate.

Incentives shall include streamlined permitting for certain vineyard proposals on slopes between 5 and 30 percent and flexibility regarding yard and road setbacks for other proposals.

**Policy CON-28:** To offset possible additional losses of riparian woodland due to discretionary development projects and conversions, developers shall provide and maintain similar quality and quantity of replacement habitat or in-kind funds to an approved riparian woodland habitat improvement and acquisition fund in Napa County. While on-site replacement is preferred where
feasible, replacement habitat may be either on-site or off-site as approved by the County.

2. Napa County Stormwater Management and Discharge Control Ordinance

On June 22, 2004, Napa County adopted its Stormwater Management and Discharge Control Ordinance (Napa County Code Chapter 16.28). To implement this Ordinance, Napa County adopted a policy for construction site runoff control requirements on December 12, 2006, and subsequently adopted a policy for post-construction runoff management requirements on June 3, 2008. Projects that disturb more than 10,000 square feet of soil, move more than 50 cubic yards of soil, disturb soils on slopes 15 percent or greater, or disturb soils within 50 feet of a waterway or storm drain that leads to a receiving water (Waters of the State) must prepare a Stormwater Quality Management Plan or a Stormwater Pollution Prevention Plan prepared, depending on the amount of soil disturbance.

Site Design and Source Control design standards or Site Design, Source Control and Treatment Control design standards apply to the following types of projects, depending on the intensity of the use or development:

♦ Uses that would pose water quality risks, such as an automotive repair shop or retail gasoline outlet.

♦ Large residential or commercial developments that exceed specific development thresholds.

♦ Large parking lots.

♦ New or redeveloped impervious surfaces 10,000 square feet or greater; hillside development on slopes greater than 30 percent.

♦ Construction or reconstruction of roadways.

♦ Installation of new or alteration of existing stormdrains.
The design standards for these projects include Best Management Practices (BMPs) that prevent or reduce pollutant discharge into receiving waters, and that are a permanent component of the development project.

B. Existing Conditions

Section 4.6.1 of the 2007 Napa County General Plan Draft EIR contains a detailed description of the existing fishery conditions in Napa County, including conditions pertaining to the Napa River Watershed, the Putah Creek/Lake Berryessa Watershed, the Suisun Creek Watershed and special-status fish species.

Watersheds that are important in regards to fisheries in Napa County include the Napa River Watershed, the Putah Creek/Lake Berryessa Watershed and the Suisun Creek Watershed. The Napa River Watershed hosts both native and non-native fish species, including several threatened fish species and species of concern, such as the rainbow/steelhead, full-run Chinook salmon,delta smelt, Sacramento splittail and hardhead. As in other areas of the State, the Napa River watershed is increasingly becoming home to exotic fish species that are replacing salmonids and other special-status fish species.

The Putah Creek/Lake Berryessa Watershed is currently inhabited by fourteen known fish species, ten of which are salmon, trout, bass or catfish species. Sports fishes from Lake Berryessa and Putah Creek have been found to contain high concentrations of mercury, originating from mercury and gold mining activities near Lake Berryessa from the late 1800s through the 1990s.

The Suisun Creek Watershed covers approximately 53 square miles, most of which are rural open space and agricultural lands. The watershed spans both Napa and Solano counties, connecting Suisun Marsh and Suisun Bay. There are approximately eight known fish species in the Suisun Creek Watershed.

There are nine special-status fish species known to be found or with the potential to be found in Napa County. These species include: green sturgeon,
Delta smelt, river lamprey, Central California Coast steelhead trout, fall/late fall run and winter run Chinook salmon, Sacramento splittail, Longfin smelt and hardhead.

C. Standards of Significance

A fisheries or fish species impact is considered significant if implementation of the Housing Element Update would result in any of the following (based on State CEQA Guidelines Appendix G):

1. Substantial adverse effect, either directly or indirectly through habitat modifications, on any special-status fish species identified in local or regional plans, policies, or regulations, or by the California Department of Fish and Game, the National Oceanic and Atmospheric Administration National Marine Fisheries Service, or the U.S. Fish and Wildlife Service;

2. Substantial adverse effect on riparian habitat; or

3. Substantial interference with the movement of any native resident or migratory fish or with established native resident or migratory fish corridors, or impedance of the use of native fish spawning sites.

D. Impact Discussion

This section discusses the potential impacts to Napa County’s fisheries as a result of the policies, programs and implementation of the proposed Housing Element. For each standard of significance, impacts are discussed separately in relation to the proposed Housing Element’s programs and housing sites.

1. Adverse Effect on Special-Status Fish Species
   a. Programs and Policies

The proposed Housing Element Update includes goals, objectives, policies and programs to assist the County in assessing housing needs, providing housing directly, and facilitating the construction of needed units. Through the implementation of programs, the County proposes to accommodate up to
153 units. These programs include second unit production and second units on parcels zoned Agricultural Preserve, farm worker housing production, density bonus for mobile home parks with Planned Development zoning, accessory units on parcels zoned Commercial Limited (CL) or Commercial Neighborhood (CN) and redesignations in the Monticello Road Rural Residential area.

Development under the proposed policies and programs can cause substantial adverse effects on special-status fish species if it results in direct or indirect habitat modification, such as increased soil erosion and sedimentation, alterations to drainage patterns, increased stormwater runoff and peak discharge, and higher rates of bank failure. Such habitat impacts from development are mainly the result of increases in impervious surfaces, which increase the volume and rate of stormwater runoff and increase the sediment and pollutant load unless addressed effectively, as well as from disturbed groundcover during construction activities.

It is anticipated that the housing units built under the proposed Housing Element would be located throughout the county. It is possible that some of these housing units could be proposed at locations that could impact special-status fish species habitat. However, the following County regulations would reduce potential impacts to special-status fish species associated with both discretionary and ministerial projects resulting from the proposed housing programs:

♦ County Conservation Regulations Section 18.108.070 requires Standard Erosion Control Measures on any permitted development and Erosion Control Plans on projects located on slopes of great than 5 percent.

♦ County Conservation Regulations Section 18.108.025 establishes stream setbacks, based on adjacent slopes, where construction of structures, earthmoving activity, grading or removal of vegetation or agricultural uses of land are prohibited.

♦ The Stormwater Quality Management Plan or Stormwater Pollution Prevention Plan required by County Stormwater Regulations Chapter
16.28, and the corresponding construction site runoff control policy, address runoff from construction sites. These requirements are discussed in detail in Section A.2 of this chapter.

- County Stormwater Regulations Chapter 16.28, and the corresponding post-construction runoff management policy, addresses runoff from the project site after the construction period is over and through the life of the project. Housing developed under the programs and policies of the proposed Housing Element that includes ten or more units would require the use of Site Design, Source Control and Treatment Control design standards. Housing development that involves the creation or redevelopment of impervious surfaces 10,000 square feet or greater, hillside development on slopes greater than 30 percent, construction or reconstruction of roadways, or installation of new or alteration of existing stormdrains would require Site Design and Source Control design standards. The design standards for these projects include BMPs that prevent or reduce pollutant discharge into receiving waters, and that are a permanent component of the development project.

In addition to these County regulations, all private property owners are required to comply with the federal and State Endangered Species Act (ESA), which protects endangered and threatened species and their habitats. Compliance with federal, State and local regulations will ensure that impacts associated with development under the programs and policies of the proposed Housing Element would be less than significant.

In addition, individual development projects proposed under three of the programs in the proposed Housing Element – the density bonus for mobile home parks, accessory units on Commercial Limited/Commercial Neighborhood parcels and redesignations in the Monticello Road Rural Residential Area programs – would be subject to discretionary review from the County. Therefore, development projects under these programs would be subject to additional review for compliance with General Plan policies and other regulations, including the Conservation Element of the Napa County General Plan and CEQA.
Several policies in the Napa County General Plan’s Conservation Element reduce the likelihood of impacts to special-status fish species occurring from the development of housing under these programs. Policy CON-11 states that the County shall maintain and improve fisheries, including by controlling sediment production from development projects and other potential sediment sources. Policy CON-13 states that the County will require that discretionary projects avoid impacts to fisheries and habitat supporting special-status species. Where such impacts cannot be avoided, projects shall include mitigation measures to: maintain sufficient dissolved oxygen in water, sufficient amounts of food and habitat and proper temperature; provide adequate vegetation to enhance water quality, minimize sedimentation, minimize soil transportation and provide shelter and food; protect habitat; provide replacement habitat on- and off-site for special-status species and enhance existing habitat values. Lastly, Policy CON-14 states that developers will be responsible for mitigation to offset losses of fisheries and riparian habitat when it is infeasible to avoid such impacts. These mitigation measures may include providing and maintaining similar habitat within the county, enhancing existing riparian habitat or paying in-kind funds to a fishery and riparian habitat fund.

In addition to these policies, further environmental review under CEQA would be required for discretionary housing development projects under these programs, including a site-specific biological resources assessment for individual projects. Compliance with the Conservation Element of the Napa County General Plan, CEQA and other State and federal regulations protecting fish species will further ensure that impacts to special-status fish species associated with these programs would be avoided. Where complete avoidance of species is determined to be infeasible, as directed by the General Plan Policy CON-14, adequate mitigation would be provided to address potentially significant impacts on special-status fish species.

b. Housing Sites
Development on many of the proposed housing sites has the potential to impact special-status fish species due to the presence of or proximity to the Napa
River, streams, drainage ditches, ponds, streams and marshes. In particular, Angwin Site A contains a perennial stream at the western edge of the site, and its native riparian vegetation may support steelhead. Moskowite Corner Sites A and B are bordered by Oak Moss Creek, which may also support steelhead. Napa Pipe is located within 100 feet of the Napa River, which supports salmon and Chinook salmon. In addition, Moskowite Corner Sites C and D, and Spanish Flat Sites C, E and F include drainages and ponds, some of which could support fish species. Detailed information regarding waterways existing on the housing sites is presented in Chapter 4.11 (Hydrology and Water Quality). However, compliance with the Napa County Conservation Regulations Chapter 18.108 would ensure appropriate stream setbacks, and, together with the Napa County Public Works Department’s construction BMP requirements and the RWQCB’s TMDL implementation measures, would ensure appropriate erosion and sediment control and protect water quality. (See Chapter 4.11 for more information about TMDL measures.) Therefore, potential impacts on special status fish species would be less than significant.

2. **Adverse Effect on Riparian Habitat**
   a. **Programs and Policies**
      It is anticipated that the housing units built under the proposed Housing Element programs would be located throughout the county. It is possible that some of these housing units could be proposed for sites containing riparian habitat. Construction under the proposed programs and policies could require stream crossings or other direct impacts to riparian habitats, resulting in the loss or degradation of riparian vegetation. However, new units constructed under programs encouraging second units, farmworker housing, increased density in mobile home parks and accessory units on CL/CN parcels would most likely be constructed on parcels that are already developed with residential buildings, commercial buildings, or intensive agriculture, where intact riparian habitat is less likely to occur.

      Furthermore, the federal, State and County regulations described in Section D.1.a above, including the County’s Conservation Regulations, the Public Works BMPs and the State and federal ESA, would reduce potential impacts
to riparian habitat associated with both discretionary and ministerial projects resulting from the proposed housing programs. Also, all development projects in the county are also required comply with the Fish and Game Code, under which a project must receive California Department of Fish and Game approval for any streambed alterations. Compliance with federal, State and local regulations will ensure that impacts associated with development under the programs and policies of the proposed Housing Element would be less than significant.

In addition, as stated in Section D.1.a above, individual development projects proposed under three of the programs in the proposed Housing Element – the density bonus for mobile home parks, accessory units on Commercial Limited/Commercial Neighborhood parcels and redesignations in the Monticello Road Rural Residential Area programs – would be subject to discretionary review from the County. Therefore, development projects under these programs would be subject to additional review for compliance with General Plan policies and other regulations, including the Conservation Element of the Napa County General Plan and CEQA.

Several policies in the Napa County General Plan’s Conservation Element protect riparian habitat from adverse impacts resulting from housing developed under these three programs. Policy CON-11 states that the County shall maintain and improve fisheries, including by managing the removal of invasive vegetation and the retention of riparian vegetation and by encouraging the large woody debris in streams consistent with flood control considerations. Policy CON-13 states that the County will require that discretionary projects avoid impacts to fisheries and habitat supporting special-status species. Policies CON-14 and CON-28 protect riparian habitat from potential impacts associated with development. In addition, Policy CON-27 addresses stream setback requirements, stating that the County shall enforce compliance and implementation of setback requirements, provide education regarding the importance of setbacks and develop incentives to encourage greater setbacks where appropriate.
Compliance with these policies, as well as the environmental review process, would further ensure that impacts to riparian habitat from discretionary projects under proposed programs would be avoided.

b. Housing Sites
Because of the presence of drainage ditches, streams, ponds or marshes, many of the sites contain riparian habitat. Angwin Site A contains riparian vegetation along a perennial stream that is dominated by native willow, big-leaf maple, Oregon ash, valley oak, California buckeye and California bay. This community also includes both native (e.g. poison oak, snowberry and wild grape) and non-native (e.g. Himalayan blackberry, English ivy and periwinkle) understory vegetation. Moskowite Corner Sites A and B contain valley oak woodland and willow scrub riparian vegetation for Oak Moss Creek. Moskowite Corner Site C contains valley oak woodland and dense willow scrub riparian vegetation along an intermittent drainage. Spanish Flat Site F contains riparian scrub that is dominated by willow and alder along an intermittent stream that bisects the site. Development on these sites has the potential to have a significant impact on riparian habitat requiring mitigation.

Bedford Slough lies to the south of the Napa Pipe sites and contains planted trees that are not large enough to serve as viable woodland riparian habitat. The bulrush and cattails in the slough are so densely vegetated that fish are not likely to survive in the diagonal drainage that connects the housing sites to the slough. The banks of the Napa River, which runs along the western edge of Napa Pipe Site A, are virtually devoid of riparian habitat. Due to this lack of riparian vegetation supportable of fish habitat, development on these sites is not expected to pose adverse effects on riparian habitat. Therefore, impacts on the Napa Pipe sites would be less than significant.2

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1 County of Napa, Napa County Housing Element Update and Zoning Amendments Draft Environmental Assessment, September, 2004, pages 141, 145, 152, 156 and 166.

For the remainder of the sites, either waterways are not present, or any riparian habitat is largely comprised of non-native vegetation and/or substantially disturbed. Therefore, development on these sites would be less than significant.

3. Interference with the Movement of Fish, Established Fish Corridors, or the Use of Spawning Sites

a. Programs and Policies

It is anticipated that the housing units built under the proposed policies and programs would be located throughout the county. It is possible that some of these housing units could be developed on sites that could impact fish migration corridors and spawning sites. Future development could result in depletion of groundwater levels that could decrease or eliminate stream baseflows, which would in turn reduce the water elevation and create barriers to fish movement and migration. Additionally, if development occurs near streams, stream crossings could impede fish movement and migration if not properly designed. (See Section 4.11, Hydrology and Water Quality, for a further discussion of surface water and groundwater.)

As stated in Sections D.1.a and D.2.a above, development projects proposed under the programs of the proposed Housing Element would be required to comply with both the federal and California ESA, the Fish and Game Code and the County’s Conservation Regulations. The Conservation Regulations include provisions that construction fencing can be required to be installed in a way that protects wildlife corridors. The Fish and Game Code requires a project to obtain California Department of Fish and Game approval for any streambed alteration. Compliance with the federal and State ESA, the Fish and Game Code and Conservation Regulation requirements will ensure that potential impacts on sensitive habitats and communities will be reduced to less-than-significant levels.

In addition, as stated in Sections D.1.a and D.2.a above, individual development projects proposed under three of the programs in the proposed Housing Element – the density bonus for mobile home parks, accessory units on
Commercial Limited/Commercial Neighborhood parcels and redesignations in the Monticello Road Rural Residential Area programs – would be subject to discretionary review from the County. Therefore, development projects under these programs would be subject to additional review for compliance with General Plan policies and other regulations, including the Conservation Element of the Napa County General Plan and CEQA.

Several policies in the Napa County General Plan’s Conservation Element reduce impacts to fish movement from housing developed under these three programs. As stated above, Policies CON-11, CON-13 and CON-14 contain measures to mitigate impacts to fisheries and habitat. Policy CON-11 states that the County shall maintain and improve fisheries, including by maintaining and restoring the channel flows and characteristics necessary for fish passage and by undertaking water use conservation strategies to prolong the duration of flows for migrating fish. Policy CON-13 states that the County will require that discretionary projects avoid impacts to fisheries and habitat supporting special-status species. Where such impacts cannot be avoided, projects shall include mitigation measures to maintain sufficient dissolved oxygen in water, sufficient amounts of food and habitat and proper temperature. Lastly, Policy CON-14 states that developers will be responsible for mitigation to offset losses of fisheries and riparian habitat when it is infeasible to avoid impacts.

Under CEQA, environmental review would be required for discretionary housing development projects under these programs, including a site-specific biological resources assessment for individual projects. Compliance with the policies of Napa County’s General Plan and the required environmental review process would further ensure that impacts to fish movement from discretionary projects under proposed programs would be avoided.

b. Housing Sites
As described in the programs and policies discussion above, compliance with applicable federal, State and County regulations will ensure that potential impacts associated with the movement of fish, established fish corridors and
the use of spawning sites would be reduced to less-than-significant levels. (See Section 4.11, Hydrology and Water Quality, for a further discussion of surface water and groundwater.)

E. Cumulative Impacts

The 2007 Napa County General Plan EIR did not find any significant and unavoidable impacts related to fisheries in Napa County. This project would not result in unavoidable impacts to fisheries because proposed sites and programs would not interfere with fish movement or spawning and would therefore not contribute to any significant and unavoidable cumulative fisheries impacts.

F. Impacts and Mitigation Measures

Impact FIS-1: Future development on Angwin Site A; Moskowite Corner Sites A, B and C; and Spanish Flat Site F could adversely affect riparian habitat.

Compliance with the County’s conservation regulations and Mitigation Measure BIO-4 would ensure that during preparation of development plans for individual sites, locations supporting riparian vegetation are accurately mapped, and that development avoids these areas.

Significance After Mitigation: Less than significant.
This section describes the potential effects of the proposed Housing Element on noise. All relevant information related to the regulatory framework and existing conditions identified in Chapter 4.7 of the 2007 Napa County General Plan Draft EIR is incorporated by reference and briefly summarized. New and updated information pertaining to noise regulations and existing conditions is also included.

A. Regulatory and Policy Framework

Section 4.7.2 of the 2007 Napa County General Plan Draft EIR contains a detailed description of the regulatory framework related to noise in the project area, which includes federal, State and local regulations and policies. Federal and State standards establish acceptable exterior and interior noise level limits for proposed land uses. Local regulations and policies establish noise level limits for construction and non-transportation related noise sources (excluding agricultural operations) and noise and land use compatibility guidelines for proposed uses.

This section contains updated regulatory information pertaining to the State Building Code, Napa County’s General Plan and the Napa County Noise Ordinance.

1. State Regulations
   a. California Building Code

   Multi-family housing in the State of California is subject to the environmental noise limits set forth in the 2007 California Building Code (Chapter 12, Appendix Section 1207.11.2). The noise limit is a maximum interior noise level of 45 dBA $L_{dn}$. Where exterior noise levels exceed 60 dBA $L_{dn}$, a report must be submitted with the building plans describing the noise control measures used.

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$1$ Day/Night Noise Level, $L_{dn}$, is the average A-weighted noise level during a 24-hour day, obtained after addition of 10 decibels to levels measured in the night between 10:00 pm and 7:00 am.
that have been incorporated into the design of the project to meet the noise limit.

2. Local Policies and Regulations
   a. Napa County General Plan  
   **Policy CC-35:** The noises associated with agriculture, including agricultural processing, are considered an acceptable and necessary part of the community character of Napa County, and are not considered to be undesirable provided that normal and reasonable measures are taken to avoid significantly impacting adjacent uses.

   **Policy CC-36:** Residential and other noise-sensitive activities shall not be located where noise levels exceed the standards contained in this Element without provision of noise attenuation features that result in noise levels meeting the current standards of the County for exterior and interior noise exposure.

   **Policy CC-38:** The following (see Table 4.7-1) are the County’s standards for maximum exterior noise levels for various types of land uses established in the County’s Noise Ordinance. Additional standards are provided in the Noise Ordinance for construction activities (i.e. intermittent or temporary noise).

   **Policy CC-39:** The following are noise compatibility guidelines for use in determining the general compatibility of planned land uses (see Table 4.7-2).

   **Policy CC-40:** Property owners proposing new noise- or vibration-sensitive uses in proximity to existing industrial activities such as Syar Quarry, haul roads leading to the quarry, and within 100 feet of railroad tracks, shall retain the services of a qualified noise expert to evaluate the potential for noise- and vibration-related land use conflicts. The expert shall recommend methods to ensure that residents and occupants will not be exposed to (a) excessive vibration levels that are disruptive or cause structural damage, or (b) noise in excess of the standards provided in this General Plan. Other methods to address noise and vibration may include, but are not limited to, building setbacks, site design and building orientation, soil compaction/grouting, noise barriers,
### Table 4.7-1  **Exterior Noise Level Standards**

<table>
<thead>
<tr>
<th>Land Use Type</th>
<th>Time Period</th>
<th>Noise Level (dBA) by Noise Zone Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Rural</td>
<td>Suburban</td>
</tr>
<tr>
<td>Single-Family Homes and Duplexes</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>10 p.m. - 7 a.m.</td>
<td>45</td>
</tr>
<tr>
<td></td>
<td>7 a.m. – 10 p.m.</td>
<td>50</td>
</tr>
<tr>
<td>Multiple Residential 3 or More Units Per Building (Triplex+)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>10 p.m. – 7 a.m.</td>
<td>45</td>
</tr>
<tr>
<td></td>
<td>7 a.m. – 10 p.m.</td>
<td>50</td>
</tr>
<tr>
<td>Office and Retail</td>
<td>10 p.m. – 7 a.m.</td>
<td>60</td>
</tr>
<tr>
<td></td>
<td>7 a.m. – 10 p.m.</td>
<td>65</td>
</tr>
<tr>
<td>Industrial and Wineries</td>
<td>Anytime</td>
<td></td>
</tr>
</tbody>
</table>

* Levels not to be exceeded more than 30 minutes in any hour.

### Table 4.7-2  **Noise Compatibility Guidelines**

<table>
<thead>
<tr>
<th>Land Use</th>
<th>Completely Compatible</th>
<th>Tentatively Compatible</th>
<th>Normally Incompatible</th>
<th>Completely Incompatible</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential</td>
<td>&lt; 55 dBA</td>
<td>55-60 dBA</td>
<td>60-75 dBA</td>
<td>&gt; 75 dBA</td>
</tr>
<tr>
<td>Commercial</td>
<td>&lt; 65 dBA</td>
<td>65-75 dBA</td>
<td>75-80 dBA</td>
<td>&gt; 80 dBA</td>
</tr>
<tr>
<td>Industrial</td>
<td>&lt; 70 dBA</td>
<td>70-80 dBA</td>
<td>80-85 dBA</td>
<td>&gt; 85 dBA</td>
</tr>
</tbody>
</table>

* Expressed as a 24-hour day-night average or Ldn.
buffers, building and foundation design, and incorporation of noise insulation. Compliance with this policy shall be demonstrated prior to issuance of a building permit.

**Policy CC-42:** The following are the County’s standards for acceptable indoor intermittent noise levels for various types of land uses. These standards should receive special attention when projects are considered in “Tentatively Compatible” or “Normally Incompatible” areas as determined by Policies CC-39 and CC-43, and new uses shall incorporate design features to ensure that these standards are met. For residential living areas these are 60 dBA Lmax\(^2\) during the day and 55 dBA Lmax at night and 45 dBA Lmax in bedrooms.

**Policy CC-44:** The County shall require that appropriate noise mitigation measures be included when new residential developments are to be built in close proximity to significant noise sources.

**Policy CC-45:** Development in the area covered by any Airport Land Use Compatibility Plan (ALUCP) shall be consistent with the noise levels projected for the airport. Where necessary, noise insulation or other measures shall be included to maintain desired interior noise levels.

**Action CC-45.1:** The County shall use avigation easements, disclosure statements, and other appropriate measures to ensure that residents and businesses within any airport influence area are informed of the presence of the airport and its potential for creating current and future noise.

b. **Napa County Noise Ordinance**

The Napa County Noise Ordinance Section 8.16.070, Exterior Noise Limits, requires that no person shall operate or cause to be operated any source of sound at any location within the unincorporated area of Napa County, or

\(^2\) The acoustical descriptor in the Interior Noise Level Criteria for Intermittent Noise table in the General Plan is incorrectly called out as CNEL. The correct descriptor is Lmax.
allow the creation of any noise on property owned, leased, occupied or otherwise controlled by such person which causes a noise level when measured on any other property, either incorporated or unincorporated, to exceed the following limits for rural residential properties during the hours of 7:00 a.m. to 10:00 p.m.:

- 50 dBA for more than 30 minutes out of an hour;
- 55 dBA for more than 15 minutes out of an hour;
- 60 dBA for a period of more than 5 minutes out of the hour;
- 65 dBA for a period of more than 1 minute out of an hour; or
- 70 dBA for any period of time.

Nighttime noise level limits of 5 dBA are more restrictive. The Ordinance requires that noise levels be measured with a calibrated sound level meter using the A-weighting scale and the slow meter response. Measurements are to be conducted at any point on the complainant's property. Noise standards are higher for suburban or urban residential developments. The Ordinance requires that adjustments be made to the standard if the Noise Control Officer judges the noise to contain a steady audible tone such as a whine, screech or hum, or is a repetitive noise such as hammering or riveting, or contains music or speech.

Table 4.7-3, which is reproduced from Table 8.16.080 of the Noise Ordinance, establishes noise level limits for construction or demolition activities. Where technically and economically feasible, construction activities shall be conducted in such a manner that the maximum noise levels at affected properties will not exceed those listed in the following schedule.

B. Existing Conditions

Section 4.7.1 of the 2007 Napa County General Plan Draft EIR contains a detailed description of the existing noise conditions in the project area. The 2007 Napa County General Plan Draft EIR describes conditions pertaining to transportation noise sources (including roadway traffic, railroads and aircraft)
and non-transportation noise sources (including farming, wineries, quarries and construction).

This section includes updated information on a noise monitoring survey conducted for this Draft EIR.

A noise monitoring survey was conducted to quantify the existing noise environment near the proposed housing sites in Angwin, Moskowite Corner, Spanish Flat, and Napa Pipe from Thursday, October 16, 2008 to Friday, October 17, 2008. The noise monitoring survey included five long-term noise measurements (LT-1, LT-2, LT-3, LT-4 and LT-5), and three short-term measurements (ST-1, ST-2, and ST-3), as shown in Figure 4.7-1. The existing noise environment at each of the measurement locations was primarily the result of local vehicular traffic. The data collected at these noise measurement locations is provided in Appendix C.

Noise measurement location LT-1 was approximately 70 feet from the center of College Avenue at Angwin Site A. Hourly average noise levels typically ranged from 52 to 60 dBA Leq\(^3\) during the day, and from 39 to 56 dBA Leq at night. The day-night average noise level at this location was 59 dBA L\(_{\text{dn}}\).

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\(^3\) Equivalent Noise Level, Leq, is the average A-weighted noise level during the measurement period.

4.7-6
FIGURE 4.7-1

NOISE MEASUREMENT LOCATIONS

Source: Illingworth & Rodkin, 2008
Long-term noise measurement LT-2 documented existing ambient noise levels at a distance of approximately 50 feet from the center of Highway 128 at Moskowitz Corner Sites A and B. Hourly average noise levels typically ranged from 55 to 62 dBA Leq during the day, and from 39 to 61 dBA Leq at night. The calculated day-night average noise level at this location was 62 dBA Ldn.

Long-term noise measurement LT-3 was approximately 42 feet from the center of Highway 121 at Moskowitz Corner Sites C and D. Daytime hourly average noise levels at location LT-3 typically ranged from 55 to 63 dBA Leq. At night, hourly average noise levels ranged from 45 to 60 dBA Leq. Daily-average noise levels at this location were 61 dBA Ldn.

Long-term noise measurement LT-4 was representative of the existing ambient noise levels at Spanish Flat Sites C, D and E. The noise measurement was made approximately 100 feet from the center of Berryessa Knoxville Road. Hourly average noise levels typically ranged from 44 to 50 dBA Leq at location LT-4. Higher than normal noise levels were generated during the 11:00 a.m. hour on October 17, and caused the hourly average noise level to reach 51 dBA Leq. Nighttime hourly average noise levels typically ranged from 32 to 47 dBA Leq. The calculated day-night average at this location was 49 dBA Ldn.

Napa Pipe Sites A and B are located west of Highway 29 and the Napa Valley Corporate Center. Existing sources of noise in the area include industrial operations on site and on immediately adjacent parcels, truck traffic associated with those uses, rail freight movements on the railroad tracks separating Napa Pipe Sites A and B, distant boat traffic on the Napa River, and planes flying into and out of the Napa County Airport. Existing and projected airport noise contour maps show the sites to be exposed to noise levels below 55
so the primary sources of noise are distant and local traffic and nearby industrial sources.

Long-term noise measurement LT-5 was made east of Napa Pipe Site B. Hourly average noise levels at this location typically ranged from 54 to 65 dBA Leq during the day. Nighttime hourly average noise levels typically ranged from 50 to 62 dBA Leq. Nighttime noise levels did not fall below 46 dBA, likely because of continuous noise generated by mechanical equipment associated with industrial activities in the site vicinity. The calculated day-night average at this location was 66 dBA Ldn.

Intermittent railroad train single-event noise levels affect both Napa Pipe Sites A and B. No railroad trains passed during the noise survey. Before the Napa Pipe Corporation closed, it was one of the primary customers for the railroad. The railroad continues to operate primarily carrying pumice from the Owens-Corning Stone Veneer Manufacturing facility located in American Canyon. When railroad trains approach a grade crossing, they are required to sound their locomotive horn. The horn typically generates a maximum noise level of 105 dBA measured 50 feet from the locomotive. As rail cars pass by, they typically generate noise levels of about 80 dBA Lmax, and diesel locomotives typically generate maximum noise level of about 88 dBA Lmax. However, train movements on the line are infrequent and would not make a significant contribution to overall average noise levels.

Short-term noise measurements were made at Angwin Site B and at two locations at the Spanish Flat housing sites. Table 4.7-4 summarizes the results of these measurements.

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4 Aircraft noise exposure contours are expressed in terms of the CNEL noise metric in California. The CNEL is always equal to, or no more than 1 dBA greater than, the Ldn at a particular location, and is used interchangeably in this evaluation.
TABLE 4.7-4  SUMMARY OF SHORT-TERM NOISE MEASUREMENT DATA

<table>
<thead>
<tr>
<th>Location</th>
<th>$L_{10}$</th>
<th>$L_{50}$</th>
<th>$L_{90}$</th>
<th>$L_{eq}$</th>
<th>$L_{dn}$</th>
</tr>
</thead>
<tbody>
<tr>
<td>ST-1A: Spanish Flat (10/16/2008, 13:50-14:00)</td>
<td>47</td>
<td>34</td>
<td>25</td>
<td>48</td>
<td></td>
</tr>
<tr>
<td>ST-1A: Spanish Flat (10/16/2008, 13:50-14:00)</td>
<td>55</td>
<td>38</td>
<td>31</td>
<td>50</td>
<td>49</td>
</tr>
<tr>
<td>ST-2: Spanish Flat Maintenance Facility (10/17/2008, 14:30-14:40)</td>
<td>41</td>
<td>29</td>
<td>27</td>
<td>44</td>
<td>48</td>
</tr>
<tr>
<td>ST-3: Angwin Site B (10/17/2008, 15:30-15:40)</td>
<td>52</td>
<td>40</td>
<td>34</td>
<td>55</td>
<td>57</td>
</tr>
</tbody>
</table>

Note: $L_{dn}$ approximated by correlating to corresponding period at long-term site. Source: Illingworth & Rodkin, 2008.

C. Standards of Significance

A noise impact is considered significant if implementation of the Housing Element Update would result in any of the following (based on State CEQA Guidelines Appendix G):

1. Exposure of people to or generation of noise levels in excess of standards established in the current Napa County General Plan, the Napa County Noise Ordinance or applicable noise standards of the incorporated cities of the County and adjoining communities.

2. Exposure of people to or generation of excessive groundborne vibration or groundborne noise levels.

3. Substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project.

Because CEQA does not define the noise level increase that is considered substantial, and because traffic noise is likely to be the primary source of changes in ambient noise levels over time, this Draft EIR utilizes thresholds for the traffic impact noise analysis that were developed by the Federal Interagency Committee on Noise (FICON). The FICON thresholds
are based on noise levels at which people typically become increasingly annoyed. (FICON thresholds are measured in A-weighted sound levels, expressed as dBA.) These recommendations have since been recognized by various local, State and federal agencies and are typically used for the analysis of transportation noise impacts:

a. Increases in predicted traffic noise levels of 5dBA, or greater, would be considered significant in areas where the ambient noise environment is less than 60 dBA.

b. In areas where the ambient noise environment is between 60 and 65 dBA, exceeds applicable noise standards, increases of 3.0 dBA, or greater, would be considered significant.

c. In areas where the ambient noise environment equals or exceeds 65 dBA, a predicted increase of 1.5 dBA, or greater, would be considered significant.

d. For areas equal to or greater than 70 dBA, increases of greater than 1 dBA would be considered significant.

4. Substantial temporary or periodic increase in ambient noise levels in the project vicinity in excess of Napa County’s Noise Ordinance Standards.

5. Exposure of people residing or working in the project area to excessive aircraft noise levels (for a project located within an airport land use plan area, within the vicinity of a private airstrip or, where such a plan has not been adopted, within two miles of a public airport or public use airport).

D. Impact Discussion

This section discusses the potential noise-related impacts in Napa County as a result of the policies, programs, and implementation of the proposed Housing Element Update. For most of the standards of significance, impacts are discussed separately in relation to the proposed Housing Element’s programs and housing sites. The third and fourth standards pertaining to permanent
and temporary increases in ambient noise levels do not separate the discussions about programs and sites because the nature of the impacts is similar.

1. Exposure of People to or Generation of Noise Levels in Excess of Established Standards
   a. Programs and Policies
   The proposed Housing Element Update includes goals, objectives, policies and programs to assist the County in assessing housing needs, providing housing directly, and facilitating the construction of needed units. Through the implementation of programs, the County proposes to accommodate up to 153 units. These programs include second unit production and second units on parcels zoned Agricultural Preserve, farm worker housing production, density bonus for mobile home parks with Planned Development zoning, accessory units on parcels zoned Commercial Limited (CL) or Commercial Neighborhood (CN) parcels and redesignations in the Monticello Road Rural Residential area.

   The implementation of these programs would allow residential units to be constructed at locations throughout the county. This could place new residences in areas where noise levels would exceed the Napa County Noise and Land Use Compatibility Standards or the Napa County Noise Ordinance limits, primarily due to vehicular traffic noise from the road network, aircraft noise near the Napa County Airport and Angwin-Virgil O Parrett Field, and agriculture-related operations such as wineries. In particular, accessory units on parcels zoned CL or CN could be subject to noise levels resulting from the commercial operations themselves, or commercial operations on adjacent properties. In addition, the policy addressing emergency shelters in the Industrial zoning district could result in emergency shelters, which are a noise-sensitive high-density residential use similar to a hotel, adjacent to industrial activities with noise levels that could exceed acceptable levels.

   However, development projects proposed under the programs of the Housing Element Update would be required to comply with the noise standards outlined in the Napa County Noise Ordinance and the California Building
Code, which require that multi-family housing design incorporate noise control measures in order to conform to established noise standards. The California Building Code also includes energy conservation requirements for features such as windows and insulation that would also have a mitigating effect. Therefore, exposure of people to noise levels in excess of established standards resulting from implementation of the proposed policies and programs would be less than significant.

In addition, individual development projects proposed under three of the programs in the proposed Housing Element – the density bonus for mobile home parks, accessory units on Commercial Limited/Commercial Neighborhood parcels and redesignations in the Monticello Road Rural Residential area programs – would be subject to discretionary review from the County. Therefore, development projects under these programs would be subject to additional review for compliance with General Plan policies and other regulations, including the Community Character Element of the Napa County General Plan and CEQA.

The General Plan Community Character Element would require all reasonable measures to address noise impacts from development under these three programs. Specifically, Policy CC-35 calls for reasonable measures to avoid significant agriculture-related noise impacts on adjacent uses. Policy CC-36 prohibits residential uses in areas that exceed noise standards without providing noise attenuation features that would reduce noise to acceptable exterior and interior levels. Policy CC-40 requires that a noise expert evaluate potential noise-related land use conflicts for residential projects in proximity to existing industrial activities. This policy also requires that the noise expert recommend measures to mitigate any noise impacts. Finally, Policy CC-44 requires that necessary noise mitigation measures are provided for any residential project in proximity to significant noise sources.

Under CEQA, environmental review would be required for discretionary housing development projects under these programs, including an assessment of potential noise impacts and appropriate mitigation measures. Compliance
with the policies of Napa County’s General Plan and the required environmental review process would further ensure that noise impacts from discretionary projects under proposed programs would be avoided.

b. Housing Sites
i. Angwin
The major source of noise in the Angwin area is Parrett Field, an airport located roughly a quarter-mile east of Howell Mountain Road. The airport is owned and operated by PUC, which uses it for aviation training as part of the PUC Flight Center, and it is also open to the public. Angwin Site B is located generally south of Parrett Field. The overall noise environment around Parrett Field (established based on the CNEL noise contours developed for the airport) is the result of individual aircraft overflights that cause intermittent maximum noise levels (represented by the Lmax acoustical descriptor). The noise exposure contours for the airport included in the General Plan Noise Element indicate that the northeast portion of the site would be within Parrett Field’s 55 CNEL contour.

A new operations forecast and noise study are currently being prepared as part of a feasibility study to determine whether the County should purchase the Angwin Airport. Final results are not yet available, but may lead to changes in the Airport Land Use Compatibility Plan.

In addition, the Angwin Volunteer Fire Station, at 275 College Drive, is located on about 1 acre at the northern end of Site A. Noise from the Angwin Volunteer Fire Station would include sirens, engine noise, an emergency generator and general maintenance activities. In response to any call, at least one engine is sent out and may have its sirens on to alert the public. Sirens are intended to be loud and disruptive, and they are specifically exempt from the County Noise Ordinance (Section 8.16.090) because they are necessary to protect public safety.

In addition to sirens, fire station activities generate noise from the engines and equipment noise on the fire trucks. Engines and equipment are started and
tested regularly. The length of time for testing varies according to each engine and whether or not any problems are encountered. Noise measurements conducted at similar fire stations during equipment testing indicate that noise levels 50 feet from the engines can reach 80 to 85 dBA.\(^5\)

The Angwin Volunteer Fire Station also has an emergency generator in case of power outages, which is enclosed in a wooden shed against the northern side of the fire station. The generator is tested periodically and generally runs for about 30 to 45 minutes to ensure that it is in good working order. Based on studies conducted at similar fire stations, the generator would be expected to emit a noise level of about 75 dBA at a distance of 50 feet from the structure.\(^6\)

Angwin Site A is located adjacent to College Avenue. The existing measured noise level along College Avenue was 59 dBA L\text{dn} 70 feet from the roadway centerline. The 60 dBA L\text{dn} noise compatibility threshold level is currently located about 60 feet from the roadway centerline. By 2030, noise from increased traffic on College Avenue is projected to increase 2 to 3 dBA L\text{dn}. Site A would, therefore, be exposed to noise levels exceeding 60 dBA L\text{dn} within about 100 feet of the College Avenue centerline, resulting in a significant impact requiring mitigation. There are no known stationary noise sources in the vicinity of Site A that could exceed Napa County Noise Ordinance limits.

Site B is located generally south of Parrett Field. The overall noise environment around Parrett Field (established based on the CNEL noise contours developed for the airport) is the result of individual aircraft overflights that cause intermittent maximum noise levels (represented by the L\text{max} acoustical descriptor). The noise exposure contours for the airport included in the General Plan Noise Element indicate that the northeast portion of the site would

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be within Parrett Field’s 55 CNEL contour. Residential uses within the 55 CNEL contour would be considered “tentatively compatible” according to the standards in the County’s Noise Ordinance, as presented in Table 4.7-2, above. Within the 55 CNEL contour, noise exposure is great enough to be of some concern, but common building construction practices will make the living indoor environment acceptable, even for sleeping quarters, and the outdoor environment will be reasonably pleasant for recreation and play. Therefore, impacts from exposure of people to generation of noise in excess of the County’s CNEL standards would be less than significant.

However, intermittent noise from aircraft operations could exceed County guidelines for intermittent noise levels inside new residences as established in Policy CC-42, resulting in a significant impact requiring mitigation.

In addition, noise from equipment testing at the Angwin Volunteer Fire Station would exceed the levels established in the County Noise Ordinance for rural residential areas for those units on Site A immediately adjacent to the Fire Station. This would be a significant impact requiring mitigation.

**ii. Moskowite Corner**

Moskowite Corner Sites A and B are located along Highway 128 south of Steele Canyon Road. The existing noise exposure resulting from traffic on Highway 128 was measured to be 62 dBA Ldn approximately 50 feet from the center of Highway 128.

By 2030, noise levels are calculated to increase 6 dBA Ldn along this segment of Highway 128. The future noise exposure would, therefore, be 68 dBA Ldn 50 feet from the roadway centerline. The noise exposure would exceed 60 dBA Ldn within about 170 feet of the roadway centerline. Noise exposure on Moskowite Corner Sites A and B would, therefore, be categorized as “normally incompatible,” resulting in a significant impact requiring mitigation.

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7 Aircraft noise exposure contours are expressed in terms of the CNEL noise metric in California. The CNEL is always equal to, or no more than 1 dBA greater than, the Ldn at a particular location, and is used interchangeably in this evaluation.
Site C is adjacent to Highway 121. The measured existing noise level along Highway 121 is 61 dBA Ldn. By 2030, the noise level along this segment of Highway 121 is calculated to increase 5 dBA Ldn. The future noise exposure would be 66 dBA Ldn 42 feet from the roadway centerline. The future noise exposure would exceed 60 dBA Ldn within about 100 feet of the roadway centerline. Moskwite Corner Site C would also fall within the “normally incompatible” noise exposure category according to the guidelines in the Noise Ordinance, resulting in a significant impact requiring mitigation.

The noise exposure for Site D would be completely compatible with County standards. There are no significant sources of noise affecting Site D. Therefore, this site has a less-than-significant impact.

iii. Spanish Flat
Spanish Flat Sites A through F are located in a quiet setting in Napa County. The existing noise level measured 100 feet from the center of Berryessa-Knoxville Road was 49 dBA Ldn.

The main source of noise in the Spanish Flat area is the Spanish Flat Fire Station. The Fire Station is located at 4454 Berryessa-Knoxville Road, immediately north of Site C. The Spanish Flat Fire Station would be expected to generate similar amounts and types of noise from sirens, engine noise, an emergency generator and general maintenance activities as those described above at the Angwin Volunteer Fire Station. The Spanish Flat Fire station also has an outdoor loudspeaker system that broadcasts radio dispatches continually throughout the day.

Noise from intermittent activity at the County corporation yard and the Spanish Flat Fire Station would be audible to residents, but would not measurably affect overall levels. The sites would, therefore, be exposed to noise levels less than 55 dBA Ldn and considered completely compatible with the noise environment. Therefore, the Spanish Flat sites have a less-than-significant impact.
iv. **Napa Pipe**

Existing primary sources of noise at the Napa Pipe site include industrial operations on-site and on immediately adjacent parcels, truck traffic associated with those uses, rail freight movements on the line running through the site, boat traffic on the adjacent Napa River, and planes flying into and out of the Napa County airport. Napa Pipe Sites A and B are located west of Highway 29 and Napa Valley Corporate Drive. A freight railroad line separates the two sites. Industrial noise sources and distant traffic noise dominate the existing noise environment at the sites. During the daytime, hourly average noise levels were primarily the result of auto and truck traffic on Highway 29 and Napa Valley Corporate Drive. Steady noise from industrial uses was evident in the data when traffic noise levels were lower. During the early morning hours, vehicular traffic noise along Highway 29 elevated the background noise levels to 55 dBA. Local traffic and truck traffic along the roadway adjoining the east side of Site B elevated noise levels during the daytime.

Intermittent railroad train single-event noise would affect both Sites A and B. The noise exposure at Site A would be “tentatively compatible,” and the noise exposure at Site B would be “normally acceptable.” Industrial noise sources to the east of Site B generate noise levels that exceed the Napa County Noise Ordinance limits during the nighttime. Therefore, Napa Pipe Sites A and B would have a **significant** impact requiring mitigation.

2. **Exposure of People to or Generation of Excessive Groundborne Vibration or Noise**

a. Programs and Policies

The proposed programs and policies could result in the construction of new housing units in areas that are subject to groundborne vibration or noise, particularly if housing is constructed near railroad tracks or a quarry operations. Individual development projects proposed under three of the programs in the proposed Housing Element – the density bonus for mobile home parks, accessory units on Commercial Limited/Commercial Neighborhood parcels and redesignations in the Monticello Road Rural Residential area programs –
would be subject to discretionary review from the County. Therefore, development projects under these programs would be subject to additional review for compliance with General Plan policies and other regulations, including the Community Character Element of the Napa County General Plan and CEQA.

For development of housing under these three programs, Policy CC-40 of the Community Character Element requires that a noise expert evaluate potential vibration-related land use conflicts for residential projects in proximity to existing industrial activities. This policy also requires that the noise expert recommend measures to mitigate any excessive vibration levels that are disruptive or cause structural damage. In addition, the environmental review process would identify potential noise impacts and appropriate mitigation measures. Therefore, groundborne vibration or noise impacts from housing developed under these three programs would be less than significant.

Housing constructed under the remaining programs of the proposed Housing Element Update would be subject to a ministerial action, so additional CEQA review would not occur. However, these units are likely to be located in rural residential and agricultural areas, some distance from industrial uses and other sources of noise and vibration. For this reason, the impact is considered less than significant.

b. Housing Sites
The US Department of Transportation has developed vibration impact assessment criteria, based on maximum overall levels for a single event, for evaluating impacts associated with rapid transit projects. Potential development of residential uses at Napa Pipe Sites A and B would be adjacent to an existing railroad line. Future operations along the railroad could include a daily freight train of about five to 15 cars. Commute trains may also be con-

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templated along this line; however, there are no definitive plans to operate commuter rail along this track at this time. While Policy CC-40, listed in Section A.2.a, above recognizes the potential for impacts from groundborne vibrations and requires property owners proposing new noise- or vibration-sensitive uses in proximity to existing industrial activities or within 100 feet of railroad tracks to retain a qualified noise expert recommend methods to prevent excessive vibration levels, the exposure of people to excessive groundborne vibration or noise on the Napa Pipe sites is considered a significant impact requiring mitigation.

The housing sites in Angwin, Moskowite Corner and Spanish Flat do not propose housing in areas that are subject to excessive groundborne vibration or noise, resulting in a less-than-significant impact.

3. Permanent Increase in Ambient Noise Levels
Traffic data provided by Fehr & Peers Transportation Consultants was reviewed to calculate potential project-related traffic noise level increases along roadways representative of those within Napa County that would be affected by the proposed project, including both the programs and housing sites. These data included turning movement counts at 15 intersections for existing conditions and projections for 2015 under no-project and with-project conditions. The total volume of traffic on these roadway segments were calculated based on the turning movement data and compared to existing conditions to calculate the anticipated noise level increase in each scenario, and the project’s relative contribution under each scenario.

The traffic data indicates that the increase in traffic noise levels attributable to the proposed project would be 0 to 2 dBA Ldn. This would represent a less-than-significant impact because the noise level increases would, in all cases, be less than the FICON significance thresholds.
4. **Temporary or Periodic Increase in Ambient Noise Levels**

Construction facilitated by the programs and housing sites proposed by the Housing Element Update would generate noise, and would temporarily increase noise levels at adjacent noise-sensitive land uses. Noise impacts resulting from construction depend on the noise generated by various pieces of construction equipment, the timing and duration of noise generating activities, and the distance between construction noise sources and noise sensitive receptors. Construction activities generate considerable amounts of noise, especially when heavy equipment is used. The highest maximum noise levels generated by construction activities would typically range from about 90 to 98 dBA at a distance of 50 feet from the noise source. Typical hourly average construction-generated noise levels are about 79 dBA to 88 dBA measured at a distance of 50 feet from the center of a site during busy construction periods. Construction-generated noise levels drop off at a rate of about 6 dBA per doubling of distance between the source and receptor. Shielding provided by buildings or terrain result in lower construction noise levels at distant receptors. Construction noise levels would at times exceed 60 dBA Leq and the ambient by at least 5 dBA Leq at nearby receivers.

Construction noise impacts often occur when construction activities take place during noise-sensitive times of the day (early morning, evening, or nighttime hours), when construction activities occur immediately adjacent to noise sensitive land uses, or when construction durations last over extended periods of time. Limiting construction activities to daytime hours is often a simple method to reduce the potential for construction noise impacts. In areas immediately adjacent to construction activities, temporary noise barriers and the selection and utilization of “quiet” construction equipment can also reduce the potential for significant noise impacts.

The duration of the construction period for individual development sites is anticipated to be less than one construction season. The Napa County Noise Ordinance specifies noise limits (see Table 4.7-3) for construction activities and limits construction to within the hours of 7:00 a.m. and 7:00 p.m., which avoids temporary noise conflicts with noise sensitive land uses by avoiding
4. Noise

4.7-22

noise sensitive hours (7:00 p.m. to 7:00 a.m., when sleep normally occurs). This is a less-than-significant impact given the anticipated construction schedules, the time that particular noise-sensitive receivers would be affected by temporary construction activities, and compliance with the Noise Ordinance limits.

5. Exposure of People to Excessive Aircraft Noise Levels

a. Programs and Policies

The implementation of the proposed programs and policies would allow residential units to be constructed at locations throughout the county. This could place new residences in areas where aircraft noise levels would exceed the Napa County Noise and Land Use Compatibility Standards. However, development projects proposed under the programs of the Housing Element Update would be required to comply with the noise standards outlined in the Napa County Noise Ordinance and the California Building Code, which require that multi-family housing design incorporate noise control measures in order to conform to established noise standards. The California Building Code also includes energy conservation requirements for structures that would also have a mitigating effect. Therefore, exposure of people to excessive aircraft noise resulting from implementation of the proposed policies and programs would be less than significant.

In addition, individual development projects proposed under three of the programs in the proposed Housing Element – the density bonus for mobile home parks, accessory units on Commercial Limited/Commercial Neighborhood parcels and redesignations in the Monticello Road Rural Residential area programs – would be subject to discretionary review from the County. Therefore, development projects under these programs would be subject to additional review for compliance with General Plan policies and other regulations, including the Community Character Element of the Napa County General Plan and CEQA.

The Community Character Element of the General Plan includes a number of policies that would mitigate potential impacts from housing constructed
under these three programs. Policy CC-36 prohibits residential uses in areas that exceed noise standards without providing noise attenuation features that would reduce noise to acceptable exterior and interior levels. Policy CC-44 requires that necessary noise mitigation measures are provided for any residential project in proximity to significant noise sources. Policy CC-45 requires that development comply with any applicable airport land use compatibility plans, and where necessary, noise insulation or other measures be provided.

In addition, housing developed under these three programs would be required to undergo an environmental review process to identify potential noise impacts and appropriate mitigation measures. Compliance with the General Plan policies discussed above and the environmental review process would further ensure that exposure of people to excessive aircraft noise levels resulting from discretionary projects under these three programs would be avoided.

b. Housing Sites

Of the four housing sites, only Angwin Site B would be affected by aircraft noise. As discussed in Section D.1.b.i, above, the exposure of new residents on Angwin Site B to intermittent aircraft noise in excess of County standards would be a significant impact requiring mitigation. As discussed below, aircraft noise at Napa Pipe Sites A and B would not be in excess of County guidelines but would be intermittently audible.

The Spanish Flat sites are not in the vicinity of any airport of private airstrip. The Moskowite Corner sites are located approximately 1 mile from Moskowite Airport, a small private airstrip. Moskowite Airport was not identified as a significant noise source in the Napa County General Plan or the General Plan EIR, which stated that activity at small private landing strips such as Moskowite Airport is highly variable.10

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Although the Napa Pipe sites are located within the Airport Land Use Compatibility Plan (ALUCP) area for the Napa Airport, the 55 dBA CNEL contour from the airport lies south of Highway 29. Noise from aircraft is occasionally audible at the Napa Pipe sites, but is not excessive and would not exceed applicable standards or the ambient noise environment resulting from other sources in the vicinity. In addition, potential impacts would be prevented by compliance with General Plan policies CC-45, which requires noise insulation or other measures for development within an ALUCP area, and Action CC-45.1, which requires disclosure statements and other appropriate measures to inform residents and businesses within any airport influence area of potential noise impacts.

In conclusion, exposure to aircraft noise on Angwin Site A and the Moskwite Corner, Spanish Flat and Napa Pipe sites would therefore have a less-than-significant impact.

E. Cumulative Impacts

The 2007 Napa County General Plan EIR found two significant and unavoidable cumulative impacts related to noise in Napa County:

♦ Traffic-related noise would increase along county roadways with projected increases in traffic volumes under all future scenarios.

♦ Proposed General Plan Update Circulation Element roadway improvements could move traffic noise closer to noise-sensitive uses.

1. Permanent Increase in Ambient Noise Levels

Cumulative traffic volumes for 2015 and 2030 were reviewed to calculate General Plan buildout traffic noise levels, including development traffic facilitated by the Housing Element Update and buildout of the Napa Pipe project, and the project’s relative contribution to these increased noise levels along affected roadway segments. As shown in Table 4.7-5, these traffic data indicate that cumulative noise levels are anticipated to increase by 4 dBA $L_{dn}$ along Capell Valley Road (Highway 121) and by 5 to 6 dBA $L_{dn}$ along
Table 4.7-5 **Substantial Increases in Traffic Noise Due to Project and Cumulative Development**

<table>
<thead>
<tr>
<th>Location and Roadway Segment</th>
<th>Increases in Traffic Noise (dBA, Ldn)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2015 No Project vs. Existing</td>
</tr>
<tr>
<td>Capell Valley Rd (SR-128)</td>
<td>1.4</td>
</tr>
<tr>
<td>Monticello Rd (SR-121)</td>
<td>1.7</td>
</tr>
<tr>
<td>SR-128 (towards Lake Berryessa)</td>
<td>2.5</td>
</tr>
</tbody>
</table>

* 2015 Plus Project assumes full implementation of Housing Element Update.
* 2030 Plus Project includes General Plan buildout, full Napa Pipe buildout, and full implementation of Housing Element Update.
* These are the only roadway segments where traffic resulting from implementation of the Housing Element Update would make a cumulatively considerable contribution to a substantial increase in traffic noise.

Monticello Road (Highway 128). The cumulative noise level increase attributable to the Housing Element Update would be about 2 dBA Ldn of the cumulative noise increase. This would represent a “cumulatively considerable” contribution to increased noise due to cumulative traffic volumes. The increased traffic resulting from the Housing Element Update would not contribute to a cumulative noise impact along any other roadway segments.

2. **Circulation Element Improvements**

The 2007 Napa County General Plan EIR found that the Circulation Element would include roadway improvements that could move traffic closer to noise-sensitive uses. The Housing Element Update does not contribute to this impact, as there are no roadway improvements proposed as part of the project, except to the extent that development on the Napa Pipe sites may require traffic mitigation involving road widening. No mitigation measures have been identified for locations immediately adjacent to sensitive receptors.
F. Impacts and Mitigation Measures

Impact NOISE-1: At Angwin Sites A and B, Moskowite Corner Sites A, B and C, and Napa Pipe Sites A and B, the Housing Element Update would allow residential units to be constructed where noise levels would exceed the Napa County Noise and Land Use Compatibility Standards or the Napa County Noise Ordinance limits.

Mitigation Measure NOISE-1: Sound-rated building construction shall be used to achieve acceptable indoor noise levels in units proposed in Angwin Sites A and B, Moskowite Corner Sites A, B and C, and Napa Pipe Sites A and B. The specification of these treatments shall be developed during the architectural design of the buildings. In general, rooms along the perimeter of the site shall require sound rated windows. All residential units in the project shall require mechanical ventilation to allow for air circulation while windows are closed for noise control.

Significance After Mitigation: Less than significant.

Impact NOISE-2: Housing development on Napa Pipe Sites A and B would be constructed in the vicinity of a railroad and a quarry, potentially exposing sensitive uses to groundborne vibration.

Mitigation Measure NOISE-2a: Consistent with General Plan Policy CC-40, residences proposed within 100 feet of any significant source of groundborne vibration, a vibration study shall be conducted prior to construction by a qualified consultant to ensure that residents would not be exposed to excessive vibration levels that be disruptive (e.g. potential to interrupt sleep) or cause structural damage. The results of the study shall include performance standards to fully mitigate vibration impacts, which may take the form of building setbacks, site design, soil compaction/grouting, and other appropriate methods.

Mitigation Measure NOISE-2b: Residences proposed within proximity of the Syar Quarry or haul roads leading to the Syar Quarry shall be
buffered and constructed to avoid significant disturbance related to groundborne vibration (e.g., potential to interrupt sleep or cause structural damage). A vibration study shall be conducted by a qualified consultant prior to construction to determine the extent of the buffer and other required measures related to building/foundation design. Prior to issuance of a building permit, the property owner shall demonstrate how study recommendations will be implemented to fully mitigate vibration impacts.

**Significance After Mitigation:** Less than significant.

**Impact NOISE-3:** At Angwin Site B, the Housing Element Update would allow residential units to be constructed where aircraft noise levels would exceed the Napa County Noise and Land Use Compatibility Standards or interior intermittent noise level limits.

**Mitigation Measure NOISE-3:** An avigation easement shall be recorded for all new residential development, informing future residents of the presence of the airport and its potential for creating current and future noise.

**Significance After Mitigation:** Less than significant.

**Impact NOISE-4:** The proposed Housing Element Update would contribute to a cumulatively considerable increase in traffic noise along roadways in the county.

There are no feasible measures to mitigate this cumulative impact to a less-than-significant level. Therefore, this cumulative impact is significant and unavoidable.
This chapter describes the potential effects of the proposed Housing Element on air quality, including impacts associated with greenhouse gas emissions and climate change. All relevant information related to the regulatory framework and existing conditions identified in Chapter 4.8 of the 2007 Napa County General Plan Draft EIR is incorporated by reference and briefly summarized. New and updated information pertaining to air quality regulations and existing conditions is also included.

A. Regulatory and Policy Framework

Section 4.8.2 of the 2007 Napa County General Plan Draft EIR contains a detailed description of the regulatory framework related to air quality in the project area, which includes federal, State, regional and local regulations and policies. The California Clean Air Act is administered by the California Air Resources Board (CARB) at the State level and by the Air Quality Management Districts at the regional and local levels. The Bay Area Air Quality Management District (BAAQMD) regulates air quality at the regional level; this includes much of the nine-county Bay Area, including Napa County.

This section contains updated information pertaining to State greenhouse gas regulations, the Bay Area Air Quality Management District and Napa County’s General Plan.

1. State Greenhouse Gas Regulations

As noted in the 2007 Napa County General Plan Draft EIR, Assembly Bill (AB) 32, the Global Warming Solutions Act, was signed into legislation in 2006. This bill requires that California cap its greenhouse gas (GHG) emissions at 1990 levels by 2020. The legislation requires that the California Air Resources Board (CARB) establish a program for Statewide GHG emissions reporting, as well as monitoring and enforcement of that program. The CARB is also required to adopt rules and regulations to achieve the maximum technologically feasible and cost-effective GHG emission reductions.
To meet these regulatory requirements, the CARB published a list of discrete GHG emissions reduction measures that can be implemented immediately. In addition, the CARB’s Early Action Plan identified regulations and measures that could be implemented in the near future to reduce GHG emissions. A Proposed Scoping Plan to reduce GHG emissions was developed in early 2008, and the plan will be considered for adoption by CARB at the end of 2008.

The main measures to reduce GHG emissions will be contained in the final AB 32 Scoping Plan. The most recent Proposed Scoping Plan, released in October 2008, includes a range of GHG reduction actions. Central to the draft plan is a cap-and-trade program covering 85 percent of the emissions in California’s economy. This program would be developed in conjunction with the Western Climate Initiative (WCI), which is comprised of seven states and three Canadian provinces. Under the Proposed Scoping Plan, CARB will develop a cap-and-trade program for California that will be linked with the other WCI Partner jurisdictions to create a regional cap-and-trade carbon market. The Plan also proposes that a third of California’s electricity come from renewable sources, such as wind, solar and geothermal, and proposes to expand and strengthen existing energy efficiency programs and building and appliance standards. The Plan also includes full implementation of California’s Clean Air Law (the Pavley greenhouse gas standards) to provide a wide range of less polluting and more efficient cars and trucks to consumers who will save on operating costs through reduced fuel use. In conjunction with this, the Plan also calls for development and implementation of the Low Carbon Fuel Standard, which will require oil companies to make cleaner domestically produced fuels. A final version of Proposed Scoping Plan will be considered for adoption in December 2008. Once adopted, the regulatory process will begin to implement the Plan. The State will have two years to develop and adopt these regulations.

California Senate Bill (SB) 97, which was signed into law in 2007, acknowledges that climate change is an important environmental issue that requires analysis under CEQA. The bill directs the State to prepare, develop, and
transmit to State resource agencies guidelines for feasible mitigation of GHG emissions or the effects of GHG emissions. The resource agencies are required to adopt these guidelines by 2010.

Pursuant to SB 97, the Governor’s Office of Planning and Research (OPR) is in the process of developing CEQA guidelines addressing GHGs. OPR is required to “prepare, develop, and transmit” the guidelines to the Resources Agency on or before July 1, 2009. In June 2008, OPR issued interim guidance for addressing climate change through CEQA. OPR recommends that each public agency develop an approach to addressing GHG emissions that is based on best available information. The approach includes three basic steps: (1) identify and quantify emissions; (2) assess the significance of the emissions; and (3) if emissions are significant, identify mitigation measures or alternatives that will reduce the impact to a less-than-significant level. The 2007 Napa County General Plan Final EIR presents information on GHG emissions in Napa County, and the County, with the Napa County Transportation and Planning Agency, is currently developing a community-wide inventory as a basis for an emissions reduction plan.

Recently, California enacted SB 375 to expand the efforts of AB 32 by controlling indirect GHG emissions caused by urban sprawl. SB 375 would develop emissions-reduction goals around which regions can apply to planning activities. SB 375 provides incentives for local governments and developers to implement new conscientiously planned growth patterns. This includes incentives for creating attractive, walkable and sustainable communities and revitalizing existing communities. The legislation also allows developers to bypass certain environmental reviews under CEQA if they build projects consistent with the new sustainable community strategies. Development of additional alternative transportation options that would reduce traffic congestion and vehicle trips and miles traveled would be encouraged. SB 375 enhances the CARB’s ability to reach the AB 32 goals by directing the agency to develop regional GHG emission reduction targets to be achieved from the transportation sector for 2020 and 2035. The CARB would work with the metropolitan planning organizations (e.g. ABAG) to align their regional
transportation, housing and land use plans to reduce vehicle miles traveled and demonstrate the region’s ability to attain its GHG reduction targets. A similar process is used to reduce transportation emissions of ozone precursor pollutants and particulate matter.

2. Bay Area Air Quality Management District
   a. Ozone Attainment Plan
   The Bay Area Air Quality Management District (BAAQMD)’s 2005 Ozone Strategy is the latest update to the Bay Area strategy to achieve the State Ozone standard, including new control measures. The control measures are proposed to satisfy State ozone planning requirements. These measures are outlined in the 2007 Napa County General Plan EIR. BAAQMD is beginning a process to work to develop the 2009 Clean Air Plan per the requirements of the California Clean Air Act. The 2009 Clean Air Plan will include an update to the Ozone Strategy. Adoption of the Plan is expected in late 2009.

   b. Wood-Burning Devices Rule
   On July 9, 2008, the Bay Area Air Quality Management District Board adopted Regulation 6, Rule 3: Wood-burning Devices, which will reduce emissions that come from residential wood burning. The new rule, adopted in July 2008, restricts wood burning when air quality is unhealthy and a wintertime Spare the Air Advisory is issued, and requires that only cleaner burning EPA certified stoves and inserts be installed in new construction or remodels, including natural gas fireplaces. The rule applies to new woodstove and fireplace inserts. The regulation also places limits on excessive smoke, prohibits the burning of garbage and other harmful materials, and also requires the labeling of firewood and solid fuels sold within the Bay Area.

3. Napa County General Plan
   The Conservation Element of the Napa County General Plan contains the following policies regarding air quality.
Policy CON-65: The County shall support efforts to reduce and offset greenhouse gas (GHG) emissions and strive to maintain and enhance the County’s current level of carbon sequestration functions through the following measures:

a. Study the County’s natural, agricultural, and urban ecosystems to determine their value as carbon sequesters and how they may potentially increase.

b. Preserve and enhance the values of Napa County’s plant life as carbon sequestration systems to recycle greenhouse gases.

c. Perpetuate policies in support of urban-centered growth and agricultural preservation preventing sprawl.

d. Perpetuate policies in support of alternative modes of transportation, including transit, paratransit, walking, and biking.

e. Consider GHG emissions in the review of discretionary projects. Consideration may include an inventory of GHG emissions produced by the traffic expected to be generated by the project, any changes in carbon sequestration capacities caused by the project, and anticipated fuel needs generated by building heating, cooling, lighting systems, manufacturing, or commercial activities on the premises. Projects shall consider methods to reduce GHG emissions and incorporate permanent and verifiable emission offsets.

f. Establish partnerships with experts, trade associations, non-governmental associations, and community and business leaders to support and participate in programs related to global climate change.

Policy CON-69: The County shall provide incentives and opportunities for the use of energy-efficient forms of transportation such as public transit, carpooling, walking, and bicycling. This shall include the provision and/or the extension of transit to urban areas where development densities (residential and nonresidential) would support transit use, as well as bus turnouts/access, bicycle storage, and carpool/vanpool parking where appropriate.
Policy CON-75: The County shall work to implement all applicable local, state, and federal air pollution standards, including those related to reductions in GHG emissions.

Policy CON-77: All new discretionary projects shall be evaluated to determine potential significant project-specific air quality impacts and shall be required to incorporate appropriate design, construction, and operational features to reduce emissions of criteria pollutants regulated by the state and federal governments below the applicable significance standard(s) or implement alternate and equally effective mitigation strategies consistent with BAAQMD’s air quality improvement programs to reduce emissions.

Policy CON-80: The County shall seek to reduce particulate emissions and avoid exceedances of state particulate matter (PM) standards by:
   a. Providing information regarding low emitting fireplaces to property owners who are constructing or remodeling homes.
   b. Fireplaces or wood stoves for new development shall comply with current local and state emission standards for wood-burning stoves or shall be fueled by natural gas.
   c. Disseminating information in support of the BAAQMD’s “Spare the Air Tonight” program (and other related programs) when PM exceedances are projected to occur.
   d. Disseminating information regarding agricultural burn requirements established by the BAAQMD.
   e. Requiring implementation of dust control measures during construction and grading activities and enforcing winter grading deadlines.

Policy CON-81: The County shall require dust control measures to be applied to construction projects consistent with measures recommended for use by the BAAQMD.

Policy CON-82: The County shall require applicants seeking demolition permits to demonstrate compliance with any applicable BAAQMD require-
ments, particularly those related to asbestos-containing materials (ACMs) and exposure to lead paint.

**Policy CON-83**: The County shall prepare and disseminate maps showing areas where soils are known to contain naturally occurring asbestos and shall require enhanced dust suppression measures for grading and construction projects in these areas consistent with BAAQMD requirements.

**Policy CON-84**: The County shall require the establishment and maintenance of adequate buffer distances or filters or other equipment modifications for new sources of toxic air contaminants (TACs) and odors near proposed or existing sensitive receptors consistent with local and state regulatory requirements and guidelines.

**Policy CON-85**: The County shall utilize construction emission control measures required by CARB or BAAQMD that are appropriate for the specifics of the project (e.g. length of time of construction and distance from sensitive receptors). These measures shall be made conditions of approval and/or adopted as mitigation to ensure implementation.

In addition to these policies, the County’s Agricultural Preservation and Land Use Element discourages scattered development that contributes to continued dependence on the private automobile as the only means of convenient transportation. Such policies also contribute to efforts to reduce air pollution.

**B. Existing Conditions**

Section 4.8.1 of the 2007 Napa County General Plan Draft EIR contains a detailed description of criteria pollutants and existing air quality conditions in the project area. The 2007 Napa County General Plan Draft EIR describes conditions pertaining to air basin characteristics, climate and meteorology, ambient air quality, air quality standards and air pollutants of concern and health effects.
Ozone (O\(_3\)) and nitrogen dioxide (NO\(_2\)) are generally considered regional pollutants because these pollutants or their precursors affect air quality on a regional scale. Pollutants such as carbon monoxide (CO), sulfur dioxide (SO\(_2\)), and lead (Pb) are considered local pollutants because they tend to accumulate in the air locally. Particulate matter is considered both a localized pollutant and a regional pollutant. The two pollutants of greatest concern to Napa County and the Bay Area are ozone and particulate matter.

The Bay Area’s attainment status for federal and State ambient air quality standards are summarized in Table 4.8-1.

This section provides updated information about air quality monitoring data for ozone and particulate matter.

1. **Ozone**
   Recent air pollutant monitoring data for the last three years (2005 to 2007) show that the Jefferson Street monitoring station has experienced one exceedance of the State 1-hour ozone standard and two exceedances of the State 8-hour ozone standard. These occurred in 2006 during an extended heat wave. No exceedances of the federal 8-hour ozone standard occurred in the last three years.

2. **Particulate Matter (PM)**
   The Jefferson Street monitoring station has only experienced one exceedance of the State 24-hour PM\(_{10}\) standard during the last three years (2005 to 2007). It should be noted that PM\(_{10}\) is measured every sixth day. PM\(_{2.5}\) is not monitored in Napa County. Monitoring data from the Tuolume Street monitoring station in Vallejo shows two exceedances of the new national 24-hour PM\(_{2.5}\) standard in 2006 and four exceedances in 2007. The new standard took effect in 2006, and the older standard was not exceeded in 2005. PM\(_{2.5}\) is also measured every sixth day.
### Table 4.8–1 Attainment of Ambient Air Quality Standards for the Bay Area

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Federal Designation</th>
<th>State Designation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ozone – 1-hour</td>
<td>No Standard</td>
<td>Serious Nonattainment</td>
</tr>
<tr>
<td>Ozone – 8-hour</td>
<td>Marginal Nonattainment</td>
<td>Nonattainment</td>
</tr>
<tr>
<td>PM$_{10}$</td>
<td>Unclassified/Attainment</td>
<td>Nonattainment</td>
</tr>
<tr>
<td>PM$_{10}$ Annual</td>
<td>No Standard</td>
<td>Nonattainment</td>
</tr>
<tr>
<td>PM$_{2.5}$ 24-hour</td>
<td>Unclassified</td>
<td>No Standard</td>
</tr>
<tr>
<td>PM$_{2.5}$ – Annual</td>
<td>Attainment</td>
<td>Nonattainment</td>
</tr>
<tr>
<td>CO</td>
<td>Attainment</td>
<td>Attainment</td>
</tr>
<tr>
<td>Nitrogen Dioxide</td>
<td>Unclassified/Attainment</td>
<td>Attainment</td>
</tr>
<tr>
<td>Sulfur Dioxide</td>
<td>Unclassified/Attainment</td>
<td>Attainment</td>
</tr>
</tbody>
</table>

Note: This standard was approved by CARB on April 28, 2005 and became effective on May 17, 2006.

### C. Standards of Significance

An air quality impact is considered significant if implementation of the Housing Element Update would result in any of the following (based on State CEQA Guidelines Appendix G):

1. Conflict with or obstruction of implementation of the applicable air plan;
2. Violation of any air quality standard or substantial contribution to an existing or projected air quality violation;
3. Cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or State ambient air quality standard;
4. Exposure of sensitive receptors to substantial pollutant concentrations;

5. Creation of objectionable odors affecting a substantial number of people; or

6. An increase in greenhouse gas emissions due to energy use and/or vehicle miles traveled that cannot be off-set by other reductions. (Note: neither Napa County, BAAQMD nor CARB have established significance criteria in relation to greenhouse gas emissions associated with general plans.)

The State CEQA Guidelines states that, where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the above determinations. The BAAQMD has developed guidelines and thresholds of significance for local plans. Inconsistency with the most recently adopted Clean Air Plan (CAP) is considered a significant impact. According to the BAAQMD, the following criteria must be satisfied for a local plan to be determined to be consistent with the CAP and not have a significant air quality impact:

1. The local plan should be consistent with the CAP population and Vehicle Miles Traveled (VMT) assumptions. This is demonstrated if the population growth over the planning period will not exceed the values included in the current CAP; and

2. The local plan demonstrates reasonable efforts to implement the Transportation Control Measures (TCMs) included in the CAP that identify cities as implementing agencies.

3. For local plans to have a less-than-significant impact with respect to potential odors and/or toxic air contaminants, buffer zones should be established around existing and proposed land uses that would emit these air pollutants.

In addition, the plans should not lead to development that would lead to violations of ambient air quality standards.
D. Impact Discussion

This section discusses the potential impacts to air quality in Napa County as a result of the policies, programs and implementation of the proposed Housing Element Update. The air quality impact discussion relies in part on the transportation analysis prepared by Fehr & Peers in 2008 for this proposed Housing Element Update. For each standard of significance, impacts are discussed in relation to the proposed Housing Element’s programs and housing sites.

1. Conflict with or Obstruct Clean Air Plan

As discussed in Section C, above, BAAQMD’s Clean Air Plan has three key components: CAP population and Vehicle Miles Traveled (VMT) assumptions, Transportation Control Measures (TCMs), and buffer zones around existing and proposed land uses that emit air pollutants.

a. Conflict with Applicable Clean Air Plan Projections

Table 4.8-2 shows the anticipated increase in population, VMT and emissions associated with housing units allowed under the proposed Housing Element Update. At an average household size of 2.54 persons per household in Napa County, the proposed programs and policies would generate 389 new residents in Napa County. The proposed housing sites would generate 3,162 new residents. Therefore, development allowed under the Housing Element would increase the population of the unincorporated area by a total of over 3,500 residents by 2014, if fully built out. As noted in the Project Description chapter, the County’s Housing Needs Assessment estimated that in 2015, there will be only 2,581 more people in unincorporated Napa County.1 The projection of 2,581 new residents is based on a more probable scenario of growth and development in Napa County. However, this EIR evaluates a larger number of units in order to analyze the most extensive possible development and thereby create the most conservative assessment of the project’s possible environmental effects.

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1 County of Napa, October 31, 2008, Housing Element Update Housing Needs Assessment, page 33.
According to ABAG’s 2007 Projections, the population of the unincorporated area in Napa County is projected to increase by 800 persons by 2015. The additional residents anticipated by the proposed housing sites would exceed ABAG’s projected population increase for the unincorporated area. This would lead to greater area source and vehicle-related air pollutant emissions than anticipated in the latest Clean Air Plan. Since population and VMT would increase at a greater rate than anticipated in the projections used to develop the latest clean Air Plan, the impact would be significant and unavoidable.

b. Transportation Control Measures
The BAAQMD Clean Air Plan transportation control measures (TCMs) assist in reducing emissions by promoting alternative transportation and discouraging the use of private automobiles. Furthermore, development under

<table>
<thead>
<tr>
<th>Proposed Housing Element Update</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Dwelling Units</td>
<td>1,398</td>
</tr>
<tr>
<td>Projected Change in Population$^a$</td>
<td>3,551</td>
</tr>
<tr>
<td>Projected Change in VMT$^b$</td>
<td>69,243</td>
</tr>
<tr>
<td>ROG (lbs/day)</td>
<td>212</td>
</tr>
<tr>
<td>NOx (lbs/day)</td>
<td>126</td>
</tr>
<tr>
<td>PM10 (lbs/day) Summer</td>
<td>113</td>
</tr>
<tr>
<td>PM10 (lbs/Day) Winter Wood Smoke</td>
<td>115</td>
</tr>
</tbody>
</table>

$^a$ Number of Dwelling Units is based off ABAG’s population projections (2.54 persons per household).
$^b$ VMT based on State average of 19.5 miles. 
the proposed Housing Element Update would be subject to the General Plan policies that support TCMs. The relevant General Plan policies are summarized in Table 4.8-7 of the 2007 General Plan Draft EIR, beginning on page 4.8-20. Mitigation measures under Impact 4.4.1 of the 2007 General Plan EIR established additional General Plan policies to be consistent with all TCMs. The proposed programs and policies under the Housing Element Update would be consistent with both the TCMs in the Clean Air Plan and the General Plan policies in support of the TCMs, so the impact would be less than significant.

c. Buffer Zones for Odors and Toxic Air Contaminants
As described in Section D.5 below, there are no housing sites that would be located near identified odor sources. However, housing locations developed in the programs and policies could be located near odor sources.

As described in Section D.4 below, Napa County does not have major sources of toxic air contaminants (TACs). There are no major highways with high truck volumes and there are no significant industrial processes. However, there may be localized areas that have high truck volumes or that are adjacent to stationary sources of air pollutants that affect areas very locally.

The General Plan includes policies to reduce exposure of new residential developments to sources of odors and TACs. Policy CC-52 and CC-53 of the Community Character Element require that adequate buffers or filtration systems for new residential development be located near sources of odors. Policy CC-54 and CC-54 require that either adequate buffer distance be provided (based on recommendations and requirements of the California Air Resources Control Board and BAAQMD), or filters or other equipment be provided to the source to reduce the potential exposure to acceptable levels. Any housing developed under the proposed Housing Element would be required to be consistent with these County policies, so the impact would be less than significant.
2. Violation of Air Quality Standards
The additional traffic increase that the proposed Housing Element Update would generate would increase congestion at existing intersections throughout the county, leading to an increase in emissions.

The Caline4 line-source dispersion model, along with emission factors produced by the EMFAC2007 model, were used to analyze the outcomes of the traffic study of the proposed Housing Element to predict carbon monoxide concentrations at the most congested intersections in Napa County for existing and future conditions. The model uses worst-case meteorological conditions to predict 1-hour levels that are adjusted to 8-hour levels and added to background concentrations. Predicted concentrations are compared to the State ambient air quality standards for 8-hour exposures.

As shown in Table 4.8–3, carbon monoxide concentrations after implementation of the proposed Housing Element are predicted to be below the State ambient air quality standard of 9.0 parts per million (ppm). Furthermore, concentrations are anticipated to decrease substantially in the future, while traffic levels increase. This is due to the substantial reductions in tailpipe emissions resulting from turnover of the fleet to newer and cleaner vehicles. As a result, the impact on local air quality resulting from the project would be less than significant.

3. Increase of Criteria Pollutant for Which the Region is in Non-Attainment
The BAAQMD CEQA Guidelines do not recommend that this standard be evaluated for programmatic CEQA reviews, such as this Housing Element Update, because quantitative thresholds are not appropriate for this level of analysis. However, the 2007 General Plan EIR included an evaluation of PM emission levels because of concerns regarding wood smoke. Because this EIR is tiered from the General Plan EIR, it also includes a discussion of potential contributions to PM emissions.
Table 4.8-3  **PROJECTED 8-HOUR CARBON MONOXIDE LEVELS**

<table>
<thead>
<tr>
<th>Location</th>
<th>Existing (2007)</th>
<th>2030 Projected Buildout of Proposed Housing Element plus Cumulative Traffic Increases</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sonoma Hwy (SR 12/SR29 and Napa Vallejo Hwy (SR221))</td>
<td>6.9 ppm</td>
<td>3.2 ppm</td>
</tr>
<tr>
<td>Atlas Peak Road and Monticello</td>
<td>2.7 ppm</td>
<td>2.2 ppm</td>
</tr>
<tr>
<td>College Road and Howell Mountain Road</td>
<td>3.4 ppm</td>
<td>2.3 ppm</td>
</tr>
</tbody>
</table>

Note: California ambient air quality standard for 8-hour carbon monoxide levels is 9.0 ppm. Modeled levels are added to a 8-hour background concentration of 2.0 ppm. Source: Illingworth & Rodkin, October 2008.

Table 4.8-2 includes the emissions of PM$_{10}$ from housing developed under the proposed Housing Element. These emissions calculations reflect winter conditions, when there would be vehicle travel and wood smoke. The combination of vehicle travel, area sources (e.g. residential heating, consumer products such as paint or cleaners) and wood smoke would result in a significant increase in PM$_{10}$ emissions from new homes constructed under the proposed Housing Element Update. However, Policy CON-80(b) of the Napa County General Plan Conservation Element requires fireplaces constructed in new dwelling units to comply with current EPA emission standards for wood-burning stoves or be fueled by natural gas. Furthermore, as noted in Section A.2.b above, the BAAQMD adopted a new rule in 2008 that will reduce emissions that come from residential wood burning. The new rule, which is in place, restricts wood burning when air quality is unhealthy and a Spare the Air Advisory is issued and requires that only cleaner burning EPA certified stoves and inserts be installed in new construction or remodels, including natural gas fireplaces.
The General Plan policy and BAAQMD rule described above would reduce PM_{10} emissions from wood smoke, so that the incremental increase caused by the proposed Housing Element would be less than significant.

4. Exposure of Sensitive Receptors to Pollutants
Napa County does not have major sources of TACs. There are no major highways with high truck volumes and there are no significant industrial processes. There may be localized areas that have high truck volumes or that are adjacent to stationary sources of air pollutants that affect areas very locally. Dry cleaners are now subject to CARB rules and regulations that will phase out the use of TACs in the near future, so these will not longer be an air quality issue that would affect land use. The General Plan includes policies to reduce exposure of new residential developments to sources of TACs. Policy CC-54 and CC-54 of the Community Character Element require that either adequate buffer distance be provided (based on recommendations and requirements of the California Air Resources Control Board and BAAQMD), or filters or other equipment be provided to the source to reduce the potential exposure to acceptable levels. As a result, the impact would be less than significant.

5. Creation of Objectionable Odors
As discussed in Section D.1.c, above, the BAAQMD CEQA Guidelines recommend that buffer zones be established in local plans to avoid odor impacts. While identified housing sites would not be located near identified odor sources, housing locations developed in the programs and policies could be located near odor sources. The General Plan adopted policies to avoid exposure to offensive odors. Policy CC-52 and CC-53 of the Community Character Element require adequate buffers or filtration systems for new residential development located near sources of odors. Therefore, a less-than-significant impact would occur.

6. Increase in Greenhouse Gas Emissions
Buildout of the Housing Element Update, in combination with other projects occurring, could contribute to levels of GHG emissions and global warming.
This impact would be on a global level. Development under the proposed Housing Element Update would indirectly contribute to GHG emissions due to increased vehicle use, energy use from new residences and expanded non-residential development, generation of waste and construction-related activities.

CO₂ is the primary GHG emitted from motor vehicles and general land uses. The California Air Pollution Control Officers Association (CAPCOA) has provided guidance for calculating CO₂ emissions. The URBEMIS2007 model was used to predict CO₂ emissions from new vehicle trips and area sources. Indirect source emissions from electricity usage were based on rates recommended by the California Climate Action Registry General Reporting Protocol (CCAR) and electricity emission rates recommended by the US EPA. The California Energy Commission (CEC) has identified electricity usage rates for residential dwellings. Emissions associated with the updated Housing Element Update are reported in Table 4.8-4.

The proposed Housing Element Update could result in over 26,000 tons of new GHG emissions per year. It should be noted that the URBEMIS2007 model does not include any future increase in fuel efficiency in the vehicle fleet. Fuel efficiency is regulated by the US Department of Transportation and current CARB regulations to address climate change. Newer fuel standards would increase light-duty automobile and light-duty truck fuel efficiency by 10 miles per gallon (to 34 miles per gallon in 2020). CARB proposes more efficient standards as part of the State’s efforts to reduce GHG emissions. These standards would apply to new vehicles sold, and therefore, would gradually affect the overall fleet as these new vehicles replace older vehicles. Therefore, the CO₂ emissions estimates for vehicle travel do not accurately reflect future conditions. It is likely that CO₂ emissions with a more fuel-efficient vehicle fleet would be less. In addition, emissions from electricity usage are anticipated to decrease substantially as the State shifts to
TABLE 4.8-4  PROJECTED ANNUAL GREENHOUSE GAS EMISSIONS

<table>
<thead>
<tr>
<th>Source</th>
<th>Proposed Programs and Policies</th>
<th>Proposed Housing Sites</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vehicle Traffic</td>
<td>1,816</td>
<td>18,123</td>
</tr>
<tr>
<td>Area Sources</td>
<td>300</td>
<td>3,574</td>
</tr>
<tr>
<td>Electricity Usage</td>
<td>224</td>
<td>3,109</td>
</tr>
<tr>
<td>Total</td>
<td>2,340</td>
<td>24,806</td>
</tr>
</tbody>
</table>


more sources of electricity generation that do not emit GHGs (e.g. wind and solar power). These emission calculations are based on current emission rates.

Because the proposed Housing Element would increase GHG emissions, the project would have a significant and unavoidable impact.

E. Cumulative Impacts

The 2007 Napa County General Plan EIR found four significant and unavoidable impacts related to air quality in Napa County:

- Implementation of the General Plan Update would not be consistent with the Clean Air Plan (CAP) since County population and employment projections would exceed regional growth projections prepared by ABAG and projected VMT would increase at a faster rate than the population. Land uses and development would result in increased emissions of ozone precursors resulting primarily from vehicles. The increased emissions would exceed the BAAQMD thresholds. In addition, the General
Plan Update would not fully support the Clean Air Transportation Control Measures that Cities and Counties are identified as having a role in implementing.

- Implementation of the General Plan Update would lead to construction and new residential uses that could have wood burning devices. These activities would increase PM\textsubscript{10} emissions for an area that already exceeds the State ambient air quality standards.

- Implementation of the General Plan Update may locate new sensitive receptors near existing or future sources of toxic air contaminants (TACs). In addition, existing sensitive receptors could be affected by new sources of toxic air contaminants developed under the General Plan Update.

- Implementation of the proposed General Plan Update would contribute to an increase in GHG emissions from vehicle transportation, building energy use and possibly agricultural operations and may contribute to increases in atmospheric GHG concentrations. Higher concentrations of GHGs have been linked to the climate change.

1. **Conflict with or Obstruction of Clean Air Plan**
   The 2007 General Plan EIR found that implementation of the General Plan Update would not be consistent with the CAP because population and employment would exceed ABAG growth projections, and projected VMT would increase at a faster rate than population. The proposed Housing Element would contribute to this significant and unavoidable cumulative impact because it would contribute to the increase in population. The proposed Housing Element would also exceed ABAG growth projections and contribute to this cumulative significant and unavoidable impact.

2. **Conflict with Particulate Matter Attainment Efforts**
   The 200 General Plan EIR found that additional residential dwelling units would increase PM\textsubscript{10} and PM\textsubscript{2.5} emissions from wood smoke. Although the proposed Housing Element Update would create new residential dwelling units, they would be subject to General Plan policies that require fireplaces to comply with current EPA emission standards for wood-burning stoves or be
fueled by natural gas. Therefore, the proposed Housing Element would not contribute to this significant and unavoidable cumulative impact.

3. Exposure of Sensitive Receptors to Pollutants
The 2007 General Plan EIR found that implementation of the General Plan Update may locate new sensitive receptors near existing or future sources of TACs. In addition, existing sensitive receptors could be affected by new sources of toxic air contaminants developed under the General Plan Update. While the proposed Housing Element would not generate new sources of TACs, it is possible that housing could be located in proximity to existing sources of TACs. However, General Plan policies require either adequate buffers or filters or other equipment to reduce exposure to acceptable levels. Therefore, the proposed Housing Element would not contribute to this significant and unavoidable cumulative impact.

4. Increase in Greenhouse Gas Emissions
The 2007 General Plan EIR identified growth in the county under the General Plan as having a significant impact on GHG emissions, even with mitigation measures. The mitigation measures required the County to inventory GHG emissions then seek ways to reduce those emissions. That process is currently being conducted. As discussed in Section D.6 above, the proposed Housing Element would also contribute to an increase in GHG emissions from vehicles and buildings. Therefore, the proposed Housing Element Update would contribute to this significant and unavoidable cumulative impact.

F. Impacts and Mitigation Measures

Impact AIR-1: The proposed Housing Element Update would conflict with regional clean air planning efforts, since population and vehicle miles traveled would increase at a greater rate than projections used for air quality planning. The projected growth could lead to an increase in the region’s VMT, contributing to the on-going air quality issues in the Bay Area. In addition, the proposed Housing Element Update would contribute to a cumulatively significant impact related to conflicts with regional clean air planning efforts be-
cause population and vehicle miles traveled will be greater than projections used for air quality planning under the General Plan.

There are no feasible measures that could mitigate this cumulative impact to a less-than-significant level. Therefore, the cumulative impact remains significant and unavoidable.²

**Impact AIR-2:** Implementation of the proposed Housing Element Update would contribute to an increase in GHG emissions from vehicle transportation and building energy use, contributing to increases in atmospheric GHG concentrations that lead to global warming. The proposed project would also contribute to a cumulatively significant impact under the General Plan related to GHG emissions.

Although the County is undertaking measures to address GHG emissions consistent with policies and action items in the 2008 General Plan, there are no identified feasible measures that could mitigate this cumulative impact to a less-than-significant level. Therefore, the cumulative impact remains significant and unavoidable.

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² The 2004 Housing Element EA found a similar impact about consistency with clean air planning efforts. Although the impact was also found to be significant and unavoidable, the 2004 EA did provide two mitigation measures to lessen the impact: Mitigation Measures AIR-1a and AIR-1b required that the Housing Element Update include policies that housing be located near transit and designed so that it is pedestrian- and bicycle-friendly. These mitigation measures were not included in this Draft EIR because such policy language is already included in the Draft Housing Element (see Policy H-6a) and is addressed by Mitigation Measure TRAF-13.
4.9 Human Health and Risk of Upset

This chapter describes the potential effects of the proposed Housing Element on human health and risk of upset. Human health and risk of upset topics include hazardous materials, safety hazards, emergency response and evacuation plans, contaminated sites and fire hazard severity. All relevant information related to the regulatory framework and existing conditions identified in Chapter 4.9 of the 2007 Napa County General Plan Draft EIR is incorporated by reference and briefly summarized. New and updated information pertaining to hazards and hazardous materials regulations and existing conditions is also included.

A. Regulatory and Policy Framework

Section 4.9.2 of the 2007 Napa County General Plan Draft EIR contains a detailed description of the regulatory framework related to human health and risk of upset in the project area that includes federal, State and local agencies, regulations and policies.

The primary federal agency pertaining to hazards and contaminated sites is the Environmental Protection Agency (EPA), which works with other federal, State, local, and American Indian agencies to develop environmental regulations and enforce environmental laws. The EPA sets national standards for a variety of environmental programs and empowers the states and tribes with responsibilities related to permit issuance, compliance monitoring and enforcement. Hazardous materials are also regulated by three other federal agencies: the Occupational Safety and Health Administration, Department of Transportation and National Institute of Health. There are a number of other federal laws and guidelines that regulate hazards and contaminated sites.

The Federal Aviation Administration (FAA) sets standards and notification requirements for objects that affect the United States’ navigable airspace. The FAA’s mission is to serve the needs of the Unites States’ aviation interests by being a leader in the planning and developing of a safe and efficient airport system.
The federal agencies and regulations pertaining to fire hazard severity include the Bureau of Land Management (BLM), the National Fire Plan and the US Bureau of Reclamation (USBR). The majority of Napa County’s federally-owned public land is under the jurisdiction of the BLM, which is responsible for fire management on these lands. The National Fire Plan was finished in 2001 by the Department of the Interior and the Department of Agriculture. The Plan outlines a ten-year strategy for managing wildland fire, hazardous fuels and ecosystem restoration and rehabilitation on public and private forest and range lands. The USBR manages property along Lake Berryessa within the county. Through an agreement with the California Department of Forestry and Fire Protection (CAL FIRE), CAL FIRE develops and implements plans to suppress wildland fires on all lands administered by USBR.

The State agencies pertaining to hazards and contaminated sites include the California Environmental Protection Agency, the Department of Toxic Substances Control (DTSC) and the California Division of Aeronautics. State regulations pertaining to hazards and contaminated sites include the Hazardous Substance Account Act; the Toxic Injection Well Control Act; the Business Plan Act; the California Hazardous Waste Control Act; the Safe Drinking Water and Toxic Enforcement Act; the Aboveground Petroleum Storage Act; the Medical Waste Management Act; Senate Bill 1082; and Assembly Bills 1809, 2185, 2707 and 2886.

The State regulations pertaining to fire hazard severity include the California Public Resources Code, Vegetation Management Program and California Fire Plan. The California Public Resources Code requires the designation of “State responsibility areas,” over which the State takes responsibility for preventing and suppressing wildland fires. The California Public Resources Code also includes defensible space requirements, which require that a fire break be provided around structures in areas that may be subject to wildfires. The Vegetation Management Program is a fire reduction program administered by CAL FIRE. The California Fire Plan, which is developed by the California Board of Forestry and CAL FIRE, is intended to reduce the overall costs and losses associated with wildfire in California.
The local programs and regulations pertaining to hazards include the Napa County Code, Napa Operational Area Hazard Mitigation Plan (OAHMP) and the Airport Land Use Compatibility Plan. The Napa County Code includes several ordinances that regulate hazardous materials and contaminated sites, and it adopts the Fire Code that the County will use to establish standards related to fire safety. The OAHMP identifies potential hazards in the county and their likelihood to occur, as well as mitigation measures to address these risks. The Airport Land Use Compatibility Plan directs the Airport Land Use Commission to review land use plans and zoning regulations in local jurisdictions to ensure that development adjacent to airports will be compatible with airport activities.

The Department of Environmental Management (DEM) is the local-level agency that administers several programs related to hazardous materials, including: the Hazardous Materials Release Response Plans and Inventory (Business Plan) Program, the California Accidental Release Prevention Program, the Underground Storage Tank Program, the Hazardous Waste Generator and Hazardous Waste Onsite Treatment Program, the Above Ground Storage Tank Program Spill Prevention and the Control and Countermeasure Plan.

This section contains updated regulatory and policy information pertaining to Napa County’s General Plan and the California Fire Code.

1. **Napa County General Plan**
   The Safety Element of the Napa County General Plan contains the following goals and policies regarding human health and risk of upset:

   **Goal SAF-1**: Safety considerations will be part of the County’s education, outreach, planning and operations in order to reduce loss of life, injuries, damage to property and economic and social dislocation resulting from fire, flood, geologic and other hazards.
Policy SAF-3: The County shall evaluate potential safety hazards when considering General Plan Amendments, rezonings or other project approvals (including but not limited to new residential developments, roads or highways, and all structures proposed to be open to the public and serving 50 persons or more) in areas characterized by:
1. Slopes over 15 percent,
2. Identified landslides,
3. Floodplains,
4. Medium or high fire hazard severity,
5. Former marshlands or
6. Fault zones.

Policy SAF-7.5: Increasing the supply of workforce housing will increase the likelihood that Napa County’s first responders will live locally and be immediately available in the event of a disaster or other emergency.

Goal SAF-3: It is the goal of Napa County to effectively manage forests and watersheds, and to protect homes and businesses from fire and wildfire and minimize potential losses of life and property.

Policy SAF-16: Consistent with building and fire codes, development in high wildland fire hazard areas shall be designed to minimize hazards to life and property.

Policy SAF-20: All new development shall comply with established fire safety standards. Design plans shall be referred to the appropriate fire agency for comment as to:
1. Adequacy of water supply.
2. Site design for fire department access in and around structures.
3. Ability for a safe and efficient fire department response.
4. Traffic flow and ingress/egress for residents and emergency vehicles.
5. Site-specific built-in fire protection.
6. Potential impacts to emergency services and fire department response.
Goal SAF-5: To protect residents and businesses from hazards caused by human activities.

Policy SAF-31: All development projects proposed on sites that are suspected or known to be contaminated by hazardous materials and/or are identified in a hazardous material/waste search shall be reviewed, tested and remediated for potential hazardous materials in accordance with all local, state and federal regulations.

Policy SAF-33: For maximum safety, all land uses and zoning within airport areas shall be reviewed for compatibility with the adopted plans for the Napa County Airport, Angwin Airport and other general aviation facilities in the county.

Policy SAF-34: All new commercial and multi-family development shall be referred to the Sheriff’s Department for review of public safety issues. If the proposed project is adjacent to or within an incorporated city/town, consultation with their law enforcement agency shall also be required.

Goal SAF-6: The County will be able to respond in the event of a disaster to protect residents and businesses from further harm and begin reconstruction as soon as reasonable.

2. Napa County Fire Code

Section 4.9.2 of the 2007 Napa County General Plan Draft EIR contains information regarding Napa County ordinances, and describes the 2000 Uniform Fire Code (UFC) as the fire code adopted by the State of California and Napa County. However, on January 1, 2008, the State of California adopted the 2006 International Fire Code (IFC) as the model code for the 2007 California Fire Code.¹ Napa County has adopted the 2007 California Fire Code, which is stated in County Code Chapter 15.32.010.²

B. Existing Conditions

Section 4.9.1 of the 2007 Napa County General Plan Draft EIR contains a detailed description of the existing conditions pertaining to hazardous materials sites, transportation of hazardous materials, airport operations hazards, railroads transport, proximity to sensitive receptors, fire hazard severity and electromagnetic fields.

A review of databases and records identified several hazardous materials sites within the county, including: 27 sites in the Site Mitigation and Brownfields Reuse Program Database, two sites on the Cortese Hazardous Waste and Substances Sites List, 322 sites on the GeoTracker Database where leaking underground fuel tanks are present, as well as 26 oil and gas well sites and 27 facilities on the Solid Waste Information System database. Other known hazardous material issues in the county include the presence of Napa Valley Petroleum, Inc., pesticide use, landfills and other solid waste disposal facilities, as well as other sources of hazardous materials, such as dry cleaning operations and tanneries.

The State has designated certain roadways and transportation routes for the transportation of hazardous materials, such as explosives, poisonous inhalation hazards and radioactive materials. Napa County does not contain any of these designated routes.

There are two public use airports and five private airstrips and heliports in Napa County, all of which have the potential to pose risks to human health. Risks associated with airports can generally be attributed to aircraft accidents, incompatible land uses, power transmission lines, wildlife hazards and tall structures. The county also contains two rail lines, the Union Pacific Railroad and the Napa Valley Wine Train.

The county’s narrow valleys, steep terrain and climate give it a high wildland fire potential. A GIS-based model released in 2007 by CAL FIRE to rank

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2 County of Napa, Napa County Code, 15.32.010.
evaluation areas by fire hazard severity found that approximately 53 percent of the land evaluated in Napa County falls within the “high” and “very high” fire hazard severity rankings.\(^3\)

On October 21, 2008, the Napa County Board of Supervisors adopted an ordinance to designate Very High Fire Hazard Severity Zones in Local Responsibility Areas, as recommended by CAL FIRE and designated on the updated Napa County Fire Hazard Severity Zone Map. The ordinance requires new construction in these zones to implement ignition resistant building standards, maintain defensible space and disclose natural hazard at the time of sale.\(^4\)

C. Standards of Significance

A human health or risk of upset impact is considered significant if implementation of the Housing Element Update would result in any of the following (based on State CEQA Guidelines Appendix G):

1. Creation of a significant hazard to the public or the environment through the routine transport, use or disposal of hazardous materials;

2. Creation of a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment;

3. Hazardous emissions or handling of hazardous or acutely hazardous materials, substances or waste within ¼-mile of an existing or proposed school;


4. Location on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and as a result, creation of a significant hazard to the public or the environment;

5. Safety hazard for people residing or working in the project area (for a project located within an airport land use plan area or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport);

6. Safety hazard for people residing or working in the project area (for a project within the vicinity of a private airstrip);

7. Impairment of the implementation of or physical interference with an adopted emergency response plan or emergency evacuation plan; or

8. Exposure of people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands.

D. Impact Discussion

This section discusses the potential impacts to human health and risk of upset in Napa County as a result of the policies, programs and implementation of the proposed Housing Element. For each standard of significance, impacts are discussed separately in relation to the proposed Housing Element’s programs and housing sites.

1. Transport, Use or Disposal of Hazardous Materials Creating Hazard to the Public or Environment

a. Programs and Policies

The proposed Housing Element Update includes goals, objectives, policies and programs to assist the County in assessing housing needs, providing housing directly, and facilitating the construction of needed units. Through the implementation of programs, the County proposes to accommodate up to 153 units. These programs include second unit production and second units on parcels zoned Agricultural Preserve, farm worker housing production,
density bonus for mobile home parks with Planned Development zoning, accessory units on parcels zoned Commercial Limited (CL) or Commercial Neighborhood (CN) and redesignations in the Monticello Road Rural Residential area.

No significant new use of hazardous materials is contemplated under the proposed Housing Element Update. New development constructed as a result of the proposed programs and policies would be limited to residential units, and would not involve the routine transport, use or disposal of hazardous materials. Hazardous materials used during construction are typically gasoline, diesel fuel, lubricating oil, grease, hydraulic fluid, solvents, caulking and paint. Hazardous materials involved in the long-term use of residential units would be limited to common industrial and household materials, such as gasoline, car batteries and household cleaning solutions. Construction and use of residential units would not produce hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste. Furthermore, development under the proposed Housing Element would be required to comply with all federal, State and local regulations pertaining to the handling, transport, disposal and clean-up of hazardous materials. Therefore, the programs and policies in the proposed Housing Element Update would have a less-than-significant impact with regard to the routine transport, use or disposal of hazardous materials.

b. Housing Sites
   i. Angwin, Moskowite Corner and Spanish Flat

   Like the housing developed under the policies and programs of the proposed Housing Element, development of the Angwin, Moskowite Corner and Spanish Flat housing sites would not generate substantial amounts of hazardous materials nor require the transportation of substantial amounts of hazardous material. Impacts as a result of the transport, use or disposal of hazardous materials would be less than significant.
ii. Napa Pipe

Development of the Napa Pipe housing sites is not expected to generate substantial amounts of hazardous materials. However, development of the Napa Pipe sites would require the removal and transport of hazardous materials prior to construction, as discussed in greater detail in Sections D.2.b.ii and D.4.b.iii, below. Such transport would be regulated by federal, State, regional, County and local agencies. Therefore, impacts as a result of the transport, use or disposal of hazardous materials would be less than significant.

2. Release of Hazardous Materials in a Foreseeable Accident Creating a Significant Hazard to the Public or Environment

a. Programs and Policies

Hazardous materials used in the construction of new housing units may expose nearby residents and other sensitive receptors to the release of hazardous materials into the environment under reasonably foreseeable accident conditions. In addition, the policy to allow homeless shelters by right in the Industrial zoning district could potentially expose residents to hazardous materials in the event of a foreseeable accident. However, these construction activities and the development of housing in Industrial zones would be regulated by applicable federal, State, regional, County and local agencies, and therefore potential impacts associated with the possible release of hazardous materials under reasonably foreseeable accident conditions would be reduced to less-than-significant levels.

b. Housing Sites

i. Angwin, Moskowite Corner and Spanish Flat

Hazardous materials used in the construction of new housing units may expose nearby residents and other sensitive receptors to the release of hazardous materials into the environment under reasonably foreseeable accident conditions. However, construction activities would be regulated by applicable federal, State, regional, County and local agencies. Regulations limit the possibilities of accidental releases and ensure safe handling procedures. This impact is considered to be less than significant.
ii. Napa Pipe
Development of the Napa Pipe site could expose construction workers and future residents to hazardous materials and contamination from previous industrial activities on the sites. Development of the site would involve the demolition of an existing industrial manufacturing plant, and subsequent earthwork (i.e. excavation, grading) to prepare the site for construction. The project would therefore require the removal and transport of hazardous materials prior to construction. An accidental release or spill during the removal or transport of hazardous materials could result in a significant impact. However, such removal and transport would be regulated by applicable federal, State, regional, County and local agencies. Regulations limit the possibilities of accidental releases and ensure safe handling procedures. In addition, actions have already been taken to address contamination on the Napa Pipe Sites. Environmental investigations have been performed by PES Environmental, Inc. as part of a Remediation Action Plan (RAP) that has been prepared for the sites. The RAP, which is described further in Section D.4.b.iii of this chapter, is intended to address hazardous materials contamination and complete an investigation and clean-up process that began in 1979 and was overseen by the San Francisco Bay Regional Water Quality Control Board (RWQCB). Because development on the Napa Pipe site would be required to comply with these regulations and procedures, this impact is considered to be less than significant.

3. Hazardous Emissions within ¼-Mile of a School
a. Programs and Policies
Housing construction under the programs and policies in the proposed Housing Element could result in hazardous emissions within ¼-mile of a school. However, construction activities would be regulated by applicable federal, State, regional, County and local agencies. Regulations limit the possibilities of accidental releases and ensure safe handling procedures. Ongoing residential activities following construction would not result in hazardous emissions. There would be some on-site use of common hazardous materials, such as

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cleaning solutions, but such materials are not expected to pose risks to nearby schools. Therefore, this impact is considered to be less than significant.

b. Housing Sites
i. Angwin
There are two schools located within ¼-mile of Angwin Site B, the Pacific Union College Elementary and Middle School, which is located at 135 Neilsen Court, and the Discoveryland Preschool, which is located at 85 Cold Springs Road. Because development on the Angwin housing sites would be residential, there would be some on-site use of common hazardous materials, such as cleaning solutions. However, such materials are not expected to pose risks to nearby schools. All hazardous materials used as a result of construction and residential use on the Angwin sites would be regulated by federal, State, regional, County and local agencies. Therefore, the development of the Angwin sites would result in less-than-significant impacts to existing or proposed schools.

ii. Moskowite Corner, Spanish Flat and Napa Pipe
There are no schools with ¼-mile of the Moskowite Corner, Spanish Flat or Napa Pipe housing sites. No schools are proposed for construction within ¼-mile of the sites. In addition, all hazardous materials used as a result of development on these sites would be regulated by federal, State, regional, County and local agencies. Therefore, the development of the Moskowite Corner, Spanish Flat and Napa Pipe sites would result in less-than-significant impacts to existing or proposed schools.

4. Location on a Hazardous Materials Site Creating a Significant Hazard to the Public or Environment
a. Programs and Policies
As described above, a review of databases and records identified numerous hazardous materials sites within the county, including leaking underground fuel tanks are present and oil and gas well sites. It is possible that future housing units would be proposed for development on a site with known on-site hazardous materials. In addition, the policy to allow homeless shelters by
right in the Industrial zoning district could potentially expose residents to hazardous materials contamination as a result of past industrial uses. However, housing developed under the proposed policies and programs would be regulated by applicable federal, State, regional, County and local agencies and regulations, including the federal Resource Conservation and Recovery Act, the California Department of Toxic Substances Control’s Hazardous Waste Management Program, Chapter 16.20 of the Napa County Code (Underground Storage of Hazardous Substances), and Chapter 16.24 of the Napa County Code (Corrective Action Plans – Contamination). Therefore, potential impacts associated with locating development on a hazardous materials site would be less than significant.

In addition, housing built under three of the programs – the density bonus for mobile home parks, accessory units on Commercial Limited/Commercial Neighborhood parcels and redesignations in Monticello Road Rural Residential Area programs – would be subject to discretionary review from the County. Therefore, development projects under these programs would be subject to the legally-required level of site-specific environmental review, which would include identifying the presence of potential hazards and the potential for contamination of hazardous materials. Should contamination be found, the development would be subject to Phase I and Phase II studies, and the contamination would be cleaned up and disposed of in accordance with federal, State and local laws.

b. Housing Sites
   i. Angwin and Moskowite Corner
      None of the Angwin or Moskowite Corner sites are included on the County list of contaminated sites. Therefore, there would be no impact regarding hazardous materials associated with the construction of housing at these sites.

   ii. Spanish Flat
      Spanish Flat Sites A, C, D and E are not included on the County list of contaminated sites. Therefore, there would be no impact regarding hazardous materials associated with construction of housing at these sites.
Spanish Flat Sites B and F are designated as hazardous materials sites. Site B is a Napa County Maintenance Yard, and there was a MTBE-containing gasoline leak from an underground storage tank. Site F also had an underground storage tank gasoline leak; the tanks, pipes and much of the contaminated soil has been removed. Failure to comply with the terms of the clean-up agreements or worsening of conditions on the sites could result in a significant impact on any housing construction on these sites in Spanish Flat. (See mitigation provided.)

iii. Napa Pipe
The Napa Pipe sites are currently listed by the California Department of Toxic Substances Control as a leaking underground fuel tank site as well as a spill, leak, investigation or cleanup site. A soil and groundwater investigation has been conducted and a RAP developed under the supervision of the San Francisco Bay RWQCB. Under the direction of the RAP, the developer must use various techniques to clean contaminated soil and groundwater. The RAP also contains information regarding several technologies for soil and groundwater cleanup and puts forth four remedial alternatives for implementing remediation actions.6

Following completion of remediation activities, a report would be prepared and submitted to the San Francisco Bay RWQCB for review and approval. The report would summarize the cleanup activities performed, verify soil and soil gas sample analytical results and document that the cleanup levels have been achieved. Additionally, monitoring results for soil treatment would be reported and the final disposition of excavated soils would be documented.

Upon approval of the reporting to the San Francisco Bay RWQCB, the project site cleanup activities would be complete. Until implementation of the RAP has been completed, development on the Napa Pipe Site would result in

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a significant impact creating a hazard to the public or environment. (See mitigation provided.)

5. Safety Hazard for People Residing or Working in a Project Area within an Airport Land Use Plan
   a. Programs and Policies

   Development under the programs and policies of the proposed Housing Element Update has the potential to locate housing units within the vicinity of public use airports. However, the proposed Housing Element Update will be reviewed by the Airport Land Use Commission (ALUC) to ensure compatibility between proposed policies and programs and the county’s airports. This review process will help to resolve potential safety hazards related to airports. In addition, Section 18.80 of the County Code establishes the Airport Compatibility Combination District (:AC Combination District), which regulates development in the vicinity of public use airports. The :AC Combination District is applied to parcels in the vicinity of public airports and is intended to reduce airport-related risks. ALUC’s review of the Housing Element Update and County Code requirements will ensure that safety hazard impacts associated with development near public airports would be less than significant.

   Furthermore, housing constructed under three of the housing programs – the density bonus for mobile home parks, accessory units on Commercial Limited/Commercial Neighborhood parcels and redesignations in Monticello Road Rural Residential Area programs – would be subject to discretionary review from the County. Therefore, development projects under these programs would be subject to additional review for compliance with General Plan policies and other regulations.

   Policy SAF-33 in the Safety Element of the Napa County General Plan states that all land uses and zoning within airport areas will be reviewed for compatibility with the adopted plans for general aviation facilities. Under CEQA, environmental review would be required for discretionary housing development projects under these programs, including a site-specific assess-
ment for hazards associated with nearby airstrips. Compliance with the policies of Napa County’s General Plan and the required environmental review process would further ensure that safety hazards associated with private airstrips would be avoided.

b. Housing Sites

i. Angwin
The Angwin sites are located within 2 miles of the Angwin-Virgil O Parrett Field airport, and Angwin Site B is located within Zone F of the Airport Planning Area, which allows housing because of the low risk of impact. New dwelling units at these sites would implement all County Code Section 18.80 requirements pertaining to development within Airport Land Use Capability Plan (ALUCP) zones. In addition, the Housing Element Update will be reviewed by the ALUC prior to adoption to ensure that proposed development on the Angwin sites complies with ALUCP policies. Consultation with the ALUC and compliance with County Code restrictions will ensure that potential safety hazards associated with public and private airstrips would be reduced to less-than-significant levels.

ii. Moskowite Corner and Spanish Flat
None of the Moskowite Corner or Spanish Flat sites are located within 2 miles of a public airport. Therefore, there would be no impact associated with public airports as a result of development of these sites.

iii. Napa Pipe
The Napa County Airport is located approximately 1.5 miles south of the Napa Pipe sites. The Napa Pipe sites are be within Zones D and E of the Napa County Airport ALUCP. Zone D, which covers the southern portion of the Napa Pipe sites, identifies an area of moderate accident risk, frequent noise intrusion and routine overflights below the altitude of 1,000 feet. For this zone, all residential uses and landfills are considered incompatible. Densities of over 150 persons per acre in and outside of structures are considered incompatible. The Housing Element Update does not propose residential uses within Zone D and the redesignation to Transitional would be imple-
mented by rezoning the Zone E portion of the property for residential use and the Zone D portion for business park use.

Zone E covers the remainder of the Napa Pipe sites and presents a low accident risk, with overflight annoyance being the primary impact element within this area. This zone allows residential uses. The ALUCP also recommends that the ALUC review development plans prior to their approval in order to determine acceptable locations for residential uses. The Napa Pipe sites would comply with the ALUCP, so impacts associated with airport hazards would be less than significant.

6. Safety Hazard for People Residing or Working in a Project Area within the Vicinity of a Private Airstrip

a. Programs and Policies

There are five small, private airstrips located throughout Napa County. Development under the programs and policies of the proposed Housing Element has the potential to locate housing units within the vicinity of private use airstrips. However, development within a private airstrip land use plan would be required to comply with the regulations of such plans.

Furthermore, as stated in Section D.5.a above, housing constructed under three of the housing programs – the density bonus for mobile home parks, accessory units on Commercial Limited/Commercial Neighborhood parcels and redesignations in Monticello Road Rural Residential Area programs – would be subject to discretionary review from the County. Therefore, development projects under these programs would be subject to additional review for compliance with General Plan policies and other regulations.

Policy SAF-33 in the Safety Element of the Napa County General Plan states that all land uses and zoning within airport areas will be reviewed for compatibility with the adopted plans for general aviation facilities. Under CEQA, environmental review would be required for discretionary housing development projects under these programs, including a site-specific assessment for hazards associated with nearby airstrips. Compliance with the poli-
cies of Napa County’s General Plan and the required environmental review process would further ensure that safety hazards associated with private airstrips would be avoided.

b. Housing Sites
   i. Angwin, Spanish Flat and Napa Pipe
      None of the Angwin, Spanish Flat or Napa Pipe sites are located within the vicinity of a private airstrip. Therefore, there would be no impact associated with private airstrips as a result of development of these sites.

   ii. Moskowite Corner
      The Moskowite Corner sites are located within the vicinity of the Moskowite Airport, a private airstrip in Capell Valley. This airstrip is located approximately 1 mile northwest of the Moskowite Corner sites, on Capell Valley Road. There is no land use compatibility plan prepared for this airstrip. Given the distance between the proposed housing and this small private airstrip, safety hazard impacts would be less than significant.

7. Interference with an Adopted Emergency Response Plan or Emergency Evacuation Plan
Napa County’s adopted emergency response plans include the OAHMP and the Hazardous Materials Release Response Plans. New dwelling units constructed as a result of proposed Housing Element Update would most likely be distributed throughout the county, not be concentrated in any one area, and therefore, would not impair or physically interfere with the implementation of these emergency plans. In addition, as noted in General Plan Policy SAF-7.5, increasing the supply of workforce housing provides the opportunity for first responders to live locally and be readily available in case of emergency. Furthermore, California Public Resources Code 4290 establishes regulations regarding road standards for fire equipment access, signage, private water supply reserves and fuel breaks. Therefore, potential impacts would be less than significant.
Additional discussion about emergency access in the Angwin and Spanish Flat areas is provided in Section G.2 of Chapter 4.4, Transportation.

8. Exposure of People or Structures to Significant Risk Involving Wildland Fires
   a. Programs and Policies
      The county’s narrow valleys, steep terrain and climate give it a high wildland fire potential. New housing units built under the programs and policies of the proposed Housing Element could be exposed to fire hazards, especially if they are located in the rural areas of the county, where vegetation increases wildland fire risks. As described above, a GIS-based model developed by CAL FIRE to rank evaluation areas by fire hazard severity found that approximately 53 percent of the land evaluated in Napa County falls within the “high” and “very high” fire hazard severity rankings. Future housing development under the programs and policies of the proposed Housing Element has the potential to expose people or structure to risks involving wildland fires, resulting in potentially significant impacts requiring mitigation.

   b. Housing Sites
      i. Angwin
         According to data released by CAL FIRE in 2007, the Angwin housing sites contain lands with very high levels of wildland fire risk. This is due to the steep surrounding terrain and high amounts of vegetation. Therefore, future housing development on the Angwin sites has the potential to expose people or structures to risks involving wildland fires. This would create significant impacts associated with exposure to risk involving wildland fires requiring mitigation.

      ii. Moskowite Corner
         According to data released by CAL FIRE in 2007, the Moskowite Corner housing sites contain lands with moderate to high levels of wildland fire risk. Therefore, future housing development on the Moskowite Corner has some

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potential to expose people or structures to risks involving wildland fires. This would potentially create significant impacts associated with exposure to risk involving wildland fires requiring mitigation.

iii. Spanish Flat
According to data released by CAL FIRE in 2007, the Spanish Flat housing sites contain lands with moderate to very high levels of wildland fire risk, due to the steep surrounding terrain and high amounts of vegetation. Therefore, future housing development on the Spanish Flat has the potential to expose people or structures to risks involving wildland fires. This would create significant impacts associated with exposure to risk involving wildland fires requiring mitigation.

iv. Napa Pipe
According to data released by CAL FIRE in 2007, the area in which the Napa Pipe housing sites are located has a low to moderate wildland fire risk. This is due to the flatness of the surrounding terrain and low amounts of vegetation, as well as the sites’ location adjacent to the Napa River. Therefore, there is no impact on the Napa Pipe sites associated with exposure to risk involving wildland fires.

E. Cumulative Impacts

The 2007 Napa County General Plan EIR did not find any significant and unavoidable impacts related to human health and risk of upset in Napa County. This project would not contribute to any cumulatively considerable human health and risk of upset impacts because hazardous materials would be handled in conformance with existing laws and potential impacts related to site clean-up and fire/emergency access would be mitigated.
F. Impacts and Mitigation Measures

Impact HUM-1: Spanish Flat Sites B and F are listed with the County as contaminated with hazardous materials. Construction of housing on these sites could constitute a significant impact.

Mitigation Measure HUM-1: Prior to development approval, construction at these sites shall be subject to Phase I and Phase II studies. Any contamination shall be cleaned up and disposed of as per local, State and federal law.

Significance After Mitigation: Less than significant.

Impact HUM-2: The Napa Pipe sites are currently listed by the California Department of Toxic Substances Control as a leaking underground fuel tank site as well as a spill, leak, investigation or cleanup site. A soil and groundwater investigation has been conducted and a remediation action plan (RAP) was developed under the supervision of the San Francisco Bay Regional Water Quality Control Board. Until implementation of the RAP has been completed, the project would result in a significant impact creating a hazard to the public or environment.

Mitigation Measure HUM-2: Prior to construction, the property owner and/or developer shall implement the approved Remedial Action Plan consistent with the Remedial Design and Implementation Plan, and obtain clearance from the Regional Water Quality Control Board. These measures would ensure that construction activities and site reuse are carried out in a manner that addresses environmental and human health risks associated with contaminated soil and groundwater.

Significance After Mitigation: Less than significant.

Impact HUM-3: Future housing development under the programs and policies of the proposed Housing Element and on the Angwin, Moskowite Cor-
ner and Spanish Flat sites has the potential to expose people or structure to risks involving wildland fires.

**Mitigation Measure HUM-3:** Prior to issuance of a building permit for development on the Angwin, Moskowite Corner and Spanish Flat sites, the County shall ensure that the following conditions will be met to address potential risks involving wildland fires:

a. Fire apparatus access roads shall have an unobstructed width of not less than 20 feet and an unobstructed vertical clearance of not less than 15 feet. These roadway widths allow for traffic to travel in both directions on the roadway but do not allow for parking. If parking is allowed on only one side of the roadway, the width shall be 30 feet, and parking on both sides of the roadway requires the roadway to be 40 feet wide.

b. Fire department access roads shall be provided to within 150 feet of all portions of all structures.

c. Two means of access/egress shall be provided for any development that serves 25 or more sites.

d. Dead end fire apparatus access roads in excess of 150 feet in length shall be provided with approved provisions for the turning around of fire apparatus.

e. Fire department access roads shall comply with the Napa County Road and Street Standards for road surface, turning radius, grade and marking.

f. Proposed developments located in a Very High Fire Hazard Severity Zone shall use Class-A rated roofing materials on all structures.

g. A comprehensive Vegetation Management Plan (VMP) shall be developed and submitted to the Napa County Fire Marshal’s Office and the California Department of Forestry for approval for developed lands. This VMP shall include fuel modification, treatment zones, methods of treatment, maintenance and responsibility. Prior to the start of fire season every year, the owner of the development
would be required to verify to the Fire Department compliance with the approved VMP.

h. Development approvals for residential development projects, serving 11 to 350 parcels or sites, shall provide 1,000 gallons per minute for a two-hour flow duration totaling 120,000 gallons of water storage to be available only for fire fighting operations. The Fire Department is willing to accept automatic fire sprinkler systems installed and maintained to the National Fire Protection Association (NFPA) Standard 13-D (Sprinkler Systems in One- and Two- Family Dwellings) throughout all of the residences as an alternate methods or material request.

i. The private fire service mains shall be installed and maintained in accordance to the National Fire Protection Standard #24 (Installation of Private Fire Service Mains and Their Appurtenances 2007 edition). Fire service mains shall be a minimum of 6 inches in diameter, listed for fire protection use, and in compliance with American Water Works Association standards.

j. The location, number and type of fire hydrants connected to the water supply shall be in accordance with the California Fire Code, 2007 edition. All hydrants shall have two 2½-inch National Hose male connections and one 4½-inch National Hose male connection. Hydrants shall be spaced 500 feet apart with a maximum travel distance of 250 feet to any hydrant.

k. The approved address numbers shall be placed on each building in such a position as to be plainly visible and legible from the street fronting the property. The address numbers shall be a minimum of 3 inches in size, visible from both directions on the road fronting the property, reflective and contrasting in color with the background.

l. The development approval shall have a written evacuation plan approved by the Napa County Fire Marshal’s Office and shall post the fire safety rules and regulations with the evacuation plan.
m. Technical assistance in the form of a fire protection engineer or consultant acceptable, and reporting directly, to the NCFD shall be provided by the applicant at no charge to the County (California Fire Code section 103.1.1) for the independent peer review of alternate methods proposals.

n. Plans detailing compliance with the fire and life safety conditions-of-approval shall be submitted to the Napa County Fire Marshal’s Office for review and approval prior to building permit issuance and/or as described above.

Significance After Mitigation: *Less than significant.*
This section describes the potential effects of the proposed Housing Element on geology, soil and mineral resources. This section addresses issues such as landform alteration and erosion, as well as potential geological and seismic hazards such as liquefaction, soil erosion, earthquakes and ground shaking. All relevant information related to the regulatory framework and existing conditions identified in Chapter 4.10 of the 2007 Napa County General Plan Draft EIR is incorporated by reference and briefly summarized. New and updated information pertaining to geology, soil and mineral resource regulations and existing conditions is also included.

A. Regulatory and Policy Framework

Section 4.10.2 of the 2007 Napa County General Plan Draft EIR contains a detailed description of the regulatory framework related to geology and soils that includes State, regional and local regulations and policies.

The State regulations and programs relevant to geology and soils include the California Geological Survey, Uniform Building Code, California Building Code, Seismic Hazards and Mapping Act, California Water Code and Surface Mining Reclamation Act. The California Geological Survey issues maps that are used for assessing potential hazards resulting from surface faulting or fault creep. These hazards are addressed by the Alquist-Priolo Earthquake Faulting Act, which requires that cities and counties prohibit development across active faults. The Uniform Building Code and California Building Code address California’s seismic conditions and include standards for building in seismic zones. The Seismic Hazards and Mapping Act requires the Department of Conservation to identify and map areas that are subject to earthquake hazards in order to reduce threats to public safety. The California Water Code, Division 3 (Dams and Reservoirs) regulates dams that are 25 feet or more in height and that have an impounding capacity of 50 acre-feet or more. Lastly, the Surface Mining Reclamation Act regulates mining operations to protect areas that contain significant mineral resources from the adverse environmental effects associated with mining.
Relevant regional regulations include the Bay Area Air Quality Management District’s (BAAQMD) Asbestos Regulations. The BAAQMD controls naturally-occurring asbestos emissions that result from construction, grading, quarrying and surface mining activities through the use of Best Available Control Technology. Under the regulations, Asbestos Dust Mitigation Plans must be prepared whenever naturally-occurring asbestos is present that could be disturbed by these operations.

The relevant local regulations are contained in the Napa County Code. County Code Chapter 18.108 (Conservation Regulations) protects lands from soil loss and protects the water quality of the county’s streams and waterways by minimizing the soil erosion associated with earthmoving, land disturbing and grading. County Code Chapter 16.28 (Stormwater Management Discharge Control) protects water resources and improves water quality by using best management practices and enforcing the Clean Water Act, the Porter-Cologne Water Quality Act and the Basin Plan. County Code Title 13, Division II (Sewage Systems) regulates sewage systems and contains requirements on the operation and maintenance of sewage facilities. County Code Chapter 18.88 (Geological Risk Combination District) contains zoning regulations to minimize risks associated with geologic and seismic hazards.

This section contains updated regulatory information pertaining to the California Building Code, Assembly Bill 162, Napa County’s General Plan and Napa County Stormwater Ordinance.

1. **International Building Code and California Building Code**

Section 4.10.2 of the 2007 Napa County General Plan Draft EIR contains State regulatory information regarding the California Building Code, describing the Uniform Building Code (UBC) as the building code adopted by the State of California. However, on January 1, 2008, the State of California
adopted the 2006 International Building Code (IBC) as the model code for the 2007 California Building Code (CBC).¹

The adoption of the IBC represents the most significant change in seismic design and construction in over a decade for California. The seismic provisions in the IBC are adopted from the American Society of Civil Engineer’s Minimum Design Loads for Buildings and Other Structures.

The 2007 CBC contains significant changes from the 1997 UBC regarding ground motion, which is defined by a spectrum based on mapped spectral responses adopted from the 2003 National Earthquake Hazards Reduction Program. The 2007 CBC also assigns a Seismic Design Category to structures to define seismic hazard in terms of Mapped Acceleration Parameters (spectral values), Site Class (soil profile) and Occupancy Category (hazardous materials content). This seismic design categorization system goes beyond the UBC approach, which was based solely on zone maps and did not take these other classifications into consideration.²

2. Assembly Bill 162
Assembly Bill (AB) 162 requires that cities and counties update their General Plan Conservation and Safety Elements to address flood-related issues. To conform with AB 162, this project proposes to update Napa County’s Conservation and Safety Elements by identifying information about flood hazards, including dam failure inundation maps, and establishing additional goals, policies and objectives to protect the community from flooding risk.

3. Napa County General Plan

The Safety and Conservation Elements of the Napa County General Plan contain the following policies pertaining to geology, soils and mineral resources.

Policy SAF-3: The County shall evaluate potential safety hazards when considering General Plan Amendments, rezonings, or other project approvals (including but not limited to new residential developments, roads or highways, and all structures proposed to be open to the public and serving 50 persons or more) in areas characterized by:

1. Slopes over 15 percent,
2. Identified landslides,
3. Floodplains,
4. Medium or high fire hazard severity,
5. Former marshlands, or
6. Fault zones.

Policy SAF-8: Consistent with County ordinances, require a geotechnical study for new projects and modifications of existing projects or structures located in or near known geologic hazard areas, and restrict new development atop or astride identified active seismic faults in order to prevent catastrophic damage caused by movement along the fault.

Policy SAF-10: No extensive grading shall be permitted on slopes over 15 percent where landslides or other geologic hazards are present unless the hazard(s) are eliminated or reduced to a safe level.

Policy SAF-11: Newly created hillside parcels should be large enough to provide flexibility in finding a stable buildable site and driveway location.

Policy SAF-26: Development proposals shall be reviewed with reference to the dam failure inundation maps in order to determine evacuation routes.
Policy CON-37: The County shall identify, improve, and conserve mineral and aggregate resources and ensure the long-term production and supply as follows:

a. The County shall request that the State Department of Conservation conduct a countywide study to assess the location and value of mineral and aggregate resources.

b. Identify known mineral resources on the General Plan Land Use Map or in the Baseline Data Report, based on mapping prepared by the State of California.

c. Apply zoning for mineral resource areas and appropriate surrounding areas to allow for resource management and future resource availability.

d. Fulfill the County’s responsibilities under the Surface Mining and Reclamation Act (SMARA).

e. Encourage compatible use of resource areas such as low density recreation, wildlife habitat, or agriculture and protect resource areas from incompatible uses.

f. Continue to enforce established policy on geothermal energy exploration and development (Napa County Code Title 16), considering the potential adverse environmental effects such as noise pollution, air pollution, water pollution, and poorly located transmission lines that can accompany improper geothermal development.

Policy CON-38: The County shall identify, improve, and conserve Napa County’s sand and gravel resources, preventing removal of streambed sand and gravel in any manner that would cause adverse effects on water quality, fisheries, riparian vegetation, or flooding.

Policy CON-39: Resource extraction activities (e.g., mining and geothermal development) shall fully address environmental implications, such as air pollution, visual distractions, siltation of nearby streams, increase in surface runoff, removal of underground water by pumping, increase in erosion or landslide hazard, disposal of chemical wastes, creation of impervious layers and surface compaction, extent of vegetation removal, and site rehabilitation procedures.
Policy CON-40: Encourage the ongoing reclamation of sand and gravel mining areas through the implementation of reclamation plans. In conformance with state law, all mining operations shall have up-to-date reclamation plans and adequate financial assurances to the satisfaction of the County.

Policy CON-48: Proposed developments shall implement project-specific sediment and erosion control measures (e.g., erosion control plans and/or stormwater pollution prevention plans) that maintain pre-development sediment erosion conditions or at minimum comply with state water quality pollution control (i.e., Basin Plan) requirements and are protective of the County’s sensitive domestic supply watersheds. Technical reports and/or erosion control plans that recommend site-specific erosion control measures shall meet the requirements of the County Code and provide detailed information regarding site specific geologic, soil, and hydrologic conditions and how the proposed measure will function.

4. Napa County Stormwater Management and Discharge Control Ordinance

On June 22, 2004, Napa County adopted its Stormwater Management and Discharge Control Ordinance (Napa County Code Chapter 16.28). To implement this Ordinance, Napa County adopted a policy for construction site runoff control requirements on December 12, 2006, and subsequently adopted a policy for post-construction runoff management requirements on June 3, 2008. Projects that disturb more than 10,000 square feet of soil, move more than 50 cubic yards of soil, disturb soils on slopes 15 percent or greater, or disturb soils within 50 feet of a waterway or storm drain that leads to a receiving water (Waters of the State) must prepare a Stormwater Quality Management Plan or a Stormwater Pollution Prevention Plan prepared, depending on the amount of soil disturbance.

Site Design and Source Control design standards or Site Design, Source Control and Treatment Control design standards apply to the following types of projects, depending on the intensity of the use or development:
Uses that would pose water quality risks, such as an automotive repair shop or retail gasoline outlet.

Large residential or commercial developments that exceed specific development thresholds.

Large parking lots.

New or redeveloped impervious surfaces 10,000 square feet or greater; hillside development on slopes greater than 30 percent.

Construction or reconstruction of roadways.

Installation of new or alteration of existing stormdrains.

The design standards for these projects include Best Management Practices (BMPs) that prevent or reduce pollutant discharge into receiving waters, and that are a permanent component of the development project.

B. Existing Conditions

Section 4.10.1 of the 2007 Napa County General Plan Draft EIR contains a detailed description of the existing geology, soils and mineral resource conditions in Napa County, including conditions pertaining to topography and local geography; geotechnical conditions; geologic hazards, faults and seismicity; surficial deposits and soil types; and mineral resources.

The existing geological conditions in Napa County include hazards related to seismicity, ground shaking, liquefaction, expansive soils and land slides. As in many California counties, Napa County has many fault lines. Of these faults, four are active: West Napa, Hunting Creek, Green Valley and Cordelia.

Alluviated valleys represent roughly 20 percent of the county’s total area. Therefore, on a county-wide basis, the potential for liquefaction-induced ground failures is relatively low. However, most of the county’s developed lands are within parts of these alluvial valleys.
Expansive soils exist at a number of locations in the county. Such conditions are typical of much of the San Francisco Bay Area. In the event of a large earthquake, the potential for highly damaging failures of this type ranges from moderate to low in the unconsolidated hill-front, valley and near bay front areas. Principal soil types and soil subtypes in Napa County are characterized by region. There are three regions in Napa County, including the Napa Valley, the Interior Valleys and the Berryessa/Knoxville area.

Landslides are generally considered the most potentially damaging cumulative geologic hazard in the county because of the widespread and frequent occurrence of damaging events. All of the major ridge and hills systems within the county have experienced landslides to varying degrees. Most landslides present a risk to property damage; however, rapid slides such as debris flows and debris avalanches, often referred to as mud slides, also present the risk of injury and death.

The occurrence of these geologic conditions has the potential to produce second-tier effects such as tsunamis, dam or levee failures. Potential for damage caused by tsunamis is considered low given that the county is not directly exposed to the open ocean. There are approximately 51 known dams of various sizes and ages in Napa County. Such dams could fail during an earthquake event. Levee failure could occur from an earthquake event along the Napa River, particularly for the older levees in the Cuttings Wharf area in the southern portion of Napa County. The City of Napa and the City of St. Helena are currently improving their levees as part of larger flood improvement projects.

Mineral resources are most prominent in the northern portion of the county. Historically, the two most valuable mineral commodities have been mercury, or quicksilver, and mineral water. More recently, building stone and aggregate produced from hard-rock quarries have been valuable mineral commodities. There are four quarries currently producing mineral resources in Napa
County. Only one of the quarries, Syar Quarry, is currently a significant mining operation.3

C. Standards of Significance

A geology or soils impact is considered significant if implementation of the proposed Housing Element would result in any of the following (based on State CEQA Guidelines Appendix G):

1. Exposure of people or structures to potentially substantial adverse effects, including the risk of loss, injury or death involving:
   a. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault (refer to Division of Mines and Geology Special Publication 42);
   b. Strong seismic ground shaking;
   c. Seismic-related ground failure, including liquefaction; or
   d. Landslides.

2. Substantial soil erosion or loss of topsoil.

3. Location on a geological unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse.

4. Location on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risk to life or property.

5. Soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater.

6. Exposure of a substantial number of people or structures to a significant risk of loss, injury or death involving flooding as a result of a failure of a levee or dam or inundation by a seiche or tsunami.

7. Substantial loss of availability of a known mineral resource that would be of value to the region and the residents of the state.

8. Substantial loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan.

D. Impact Discussion

This section discusses the potential impacts to Napa County’s geology and soils as a result of the policies, programs and implementation of the proposed Housing Element. For each standard of significance, impacts are discussed separately in relation to the proposed Housing Element’s programs and housing sites.

1. Exposure of People or Structures to Risk of Loss, Injury or Death
   a. Programs and Policies
      The proposed Housing Element Update includes goals, objectives, policies and programs to assist the County in assessing housing needs, providing housing directly, and facilitating the construction of needed units. Through the implementation of programs, the County proposes to accommodate up to 153 units. These programs include second unit production and second units on parcels zoned Agricultural Preserve, farm worker housing production, density bonus for mobile home parks with Planned Development zoning, accessory units on parcels zoned Commercial Limited (CL) or Commercial Neighborhood (CN) and redesignations in the Monticello Road Rural Residential area.

      It is anticipated that the housing units built under the proposed programs and policies will be located throughout the county. It is possible that some of these housing units could be proposed for sites subject to fault rupture,
ground shaking, ground failure or landslides. These hazards could expose people or structures to risk of loss, injury or death if housing units are not appropriately designed.

However, development projects proposed under the programs of the Housing Element Update would be required to comply with the CBC, which contains building standards that reduce geologic and seismic risks through safe building design. Adherence to the CBC will ensure that impacts would be reduced to less-than-significant levels.

In addition, individual development projects proposed under three of the programs in the proposed Housing Element – the density bonus for mobile home parks, accessory units on Commercial Limited/Commercial Neighborhood parcels and redesignations in the Monticello Road Rural Residential Area programs – would be subject to discretionary review from the County. Therefore, development projects under these programs would be subject to additional review for compliance with General Plan policies and other regulations, including the Safety Element of the Napa County General Plan and CEQA.

Several policies in the Napa County General Plan’s Safety Element reduce risk of loss, injury or death resulting from development of housing under these three programs. Policy SAF-3 states that the County will evaluate potential safety hazards when approving projects in areas that are steeply sloped or contain landslides, floodplains, fire hazards, marshlands or fault zones. Policy SAF-8 states that geotechnical studies are required for projects in areas known to pose risks associated with geologic and seismic hazards. Lastly, Policy SAF-10 states that no grading shall be permitted on steep slopes where geologic hazards are present until such hazards are reduced to safe levels.

Under CEQA, environmental review would be required for discretionary housing development projects under these programs to identify impacts and appropriate mitigation measures associated with these geologic and seismic hazards. This review process, coupled with adherence to the CBC and the
General Plan policies described above, would further ensure that impacts from discretionary projects under proposed programs would be avoided.

b. Housing Sites
No active faults are known to be present within or in the immediate vicinity of any of the housing sites. A fault that crosses Spanish Flat Sites A, B and C is inactive. The Soda Creek fault may cross the Napa Pipe sites, but it is also considered inactive and is not included as an Alquist-Priolo Earthquake Fault Zones. Therefore, there is no risk of fault-related ground rupture within the sites. However, at a regional scale, intense seismic activity could cause substantial ground shaking on the sites, which could result in significant damage to structures and, in severe instances, injuries or loss of life. Therefore, development on all of the housing sites could result in a significant impact related to ground shaking requiring mitigation.

i. Angwin
No landslides are known to be present on the Angwin housing sites or in the immediate vicinity. In the event of a large earthquake, Angwin Site A has the potential for liquefaction within the alluvial deposits that underlie the site. Where liquefiable materials are present adjacent to an incised channel, as is the case with this site, lateral spreading can occur as a result of liquefaction. This would be a significant impact requiring mitigation. Angwin Site B presents minimal geologic constraints to development. The site is underlain by relatively hard volcanic tuff bedrock at a shallow depth, which eliminates risk of liquefaction and landslide.

ii. Moskowite Corner
In general, all Moskowite Corner sites present a low level of geologic constraint to development. Moskowite Corner Sites B and C are underlain by bedrock, thus liquefaction and landsliding is not a significant risk. However, Moskowite Corner Sites A and B have the potential for liquefaction of the
alluvium that underlies the sites and landsliding on the slopes of the small hill to the west. Both of these impacts are potentially significant requiring mitigation.

iii. Spanish Flat
On the majority of the Spanish Flat sites, no impacts would occur in relation to landslides. Aside from Site E, no landslides were observed, and terrain on each site is gently sloping; therefore the risk of landslides is judged to be low. The sites are all underlain by bedrock, therefore liquefaction would not be a risk for most of the sites. However, it is possible that some liquefiable materials are present within the alluvium at Sites C, D and E. Impacts related to ground failure and landslide are therefore considered to be less than significant on Spanish Flat Sites A, B and F. Due to the possible liquefiable materials present on Spanish Flat Sites C, D and E, the potential risk of loss, injury or death is potentially significant requiring mitigation.

In addition, Spanish Flat Site E contains a moderately large landslide on its western side, and it is encroaching into the development area. The potential for future landslide movement is a significant impact. In addition, Spanish Flat Site F includes an extensive fill area that is likely to have not been placed in accordance with current engineering standards, given its condition. This fill is located near a ravine which is experiencing erosion and bank failures. Such failures could undermine the proposed development area and result in a landslide, causing a significant impact requiring mitigation.

iv. Napa Pipe
The Napa Pipe sites are essentially flat, so future development would not expose people or structures to risk from landslides. Thus there would be no impact associated with landslide risk.

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However, the risk of liquefaction is significant on the Napa Pipe sites. Test borings performed at the site locally encountered potentially liquefiable sands and silts within the alluvial sediments. Therefore, housing development on the Napa Pipe sites would pose a potentially significant impact requiring mitigation.

2. Soil Erosion or Loss of Topsoil
   a. Programs and Policies

   It is anticipated that the housing units built under the proposed Housing Element will be located throughout the county. Improper grading and erosion control associated with this housing development could lead to increased soil erosion, unstable slopes and inadequate drainage.

   However, development projects proposed under the programs of the proposed Housing Element would be required to comply with the following provisions of the Napa County Code:

   ♦ The Stormwater Quality Management Plan or Stormwater Pollution Prevention Plan required by County Stormwater Regulations Chapter 16.28, and the corresponding construction site runoff control policy, address runoff and erosion from construction sites. These requirements are discussed in detail in Section A.4 of this chapter.

   ♦ County Stormwater Regulations Chapter 16.28, and the corresponding post-construction runoff management policy, addresses runoff and erosion from the project site after the construction period is over and through the life of the project. Housing developed under the programs and policies of the proposed Housing Element that includes ten or more units would require the use of Site Design, Source Control and Treatment Control design standards. Housing development that involves the creation or redevelopment of impervious surfaces 10,000 square feet or

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greater, hillside development on slopes greater than 30 percent, construction or reconstruction of roadways, or installation of new or alteration of existing stormdrains would require Site Design and Source Control design standards. The design standards for these projects include BMPs that prevent or reduce discharge, and that are a permanent component of the development project.

♦ The County’s Conservation Regulations require setbacks along streams and prohibit certain activities on steep slopes in order to prevent soil erosion.

Adherence to these Public Works standards and Conservation Regulations will ensure that impacts would be reduced to less-than-significant levels.

In addition, as stated in Section D.1.a above individual development projects proposed under three of the programs in the proposed Housing Element – the density bonus for mobile home parks, accessory units on Commercial Limited/Commercial Neighborhood parcels and redesignations in the Monticello Road Rural Residential Area programs – would be subject to discretionary review from the County. Therefore, development projects under these programs would be subject to additional review for compliance with General Plan policies and other regulations, including the Napa County General Plan and CEQA.

Policy CON-48 in the Conservation Element of the County’s General Plan requires developments to implement sediment and erosion control measures that maintain pre-development conditions and comply with applicable County and State requirements. In addition, the Safety Element of the Napa County General Plan contains policies that require development projects to prevent erosion on unstable slopes through restrictions in grading and building and requirements for planting vegetation.

Under CEQA, environmental review would be required for discretionary housing development projects under these programs to identify impacts and appropriate mitigation measures associated with these soil erosion or loss of topsoil. This review process, coupled with adherence to the County’s Public
Works standards and the General Plan policies described above, would further ensure that impacts from discretionary projects under proposed programs would be avoided.

b. Housing Sites
   i. Angwin
      Soils within Angwin Sites A and B are only moderately erodible, which does not itself pose a significant impact related to soil erosion. However, along the western margin of Site A is a perennial creek. Several areas of bank erosion and small bank failures are present along this creek, and there is potential for additional bank erosion if protective measures are not taken. However, the Conservation Regulations in the Napa County Code require setbacks along streams and other measures that would prevent soil erosion. Compliance with County regulations will ensure that impacts associated with soil erosion and loss of topsoil would be reduced to less-than-significant levels.

   ii. Moskowite Corner
      Moskowite Corner Sites A and B contain soils that are only moderately erodible, and Sites C and D have lower erodibility. With proper erosion control during grading and construction, and compliance with the County’s Conservation Regulations, impacts associated with soil erosion would be less than significant.

   iii. Spanish Flat
      All of the Spanish Flat sites contain soils that have low erodibility. However, all of these sites also contain existing erosion problem areas. Significant erosion has occurred along a drainage ravine adjacent to Sites A and B. Sites C, D and E have experienced some grading, cut and fill, leaving steep cut slopes that show some indications of minor erosion and sloughing. Sites C and D also include a drainage channel with significant bank erosion. Finally, erosion and sloughing is occurring along the slopes of a ravine that is located immediately downslope of Site F. Although the Spanish Flat sites contain the potential for risks associated with these erosion areas, development on the Spanish Flat sites would be required to comply with the County’s Conserva-
tion Regulations, which would reduce potential impacts to less-than-significant levels.

**iv. Napa Pipe**

Borings and test pits performed by the Napa Pipe developer’s geotechnical engineer\(^6\) found that the site is covered with a layer of fill that ranges from about 2 to 13 feet in thickness. This fill was placed decades ago to raise the site elevation and provide suitable building areas. The fill consists mainly of imported clay, silt and sand and gravel that covers the native surficial soils, estuarine and alluvial sediments throughout the site. With proper erosion control during grading and construction, and compliance with the County’s Conservation Regulations, impacts associated with soil erosion would be less than significant.

### 3. Location on an Unstable Geological Unit or Soil

Development on unstable geologic units or soils could result in on- or off-site landslides, liquefaction, lateral spreading, subsidence or collapse. Landslides and liquefaction are evaluated in Section D.1, above. This section focuses on lateral spreading, subsidence and collapse.

**a. Programs and Policies**

It is anticipated that the housing units built under the proposed Housing Element will be located throughout the county. It is possible that some of these housing units could be proposed for sites subject to lateral spreading, subsidence or collapse, or that development of these sites could cause such phenomena.

However, development projects proposed under the programs of the Housing Element Update would be required to comply with the CBC, which contains building standards that reduce geologic risks through safe building design. Adherence to the CBC will ensure that impacts associated with location on unstable soils would be reduced to less-than-significant levels.

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\(^6\) Geotechnical investigation reports prepared by Treadwell & Rollo, dated January 23, 2007, and May 21, 2007
In addition, as stated in Section D.1.a above, individual development projects proposed under three of the programs in the proposed Housing Element – the density bonus for mobile home parks, accessory units on Commercial Limited/Commercial Neighborhood parcels and redesignations in the Monticello Road Rural Residential Area programs – would be subject to discretionary review from the County. Therefore, development projects under these programs would be subject to additional review for compliance with General Plan policies and other regulations, including the Safety Element of the Napa County General Plan and CEQA.

Policy SAF-8 of the Napa County General Plan’s Safety Element states that geotechnical studies are required for projects in areas known to pose risks associated with geologic and seismic hazards. Furthermore, any housing developed under the programs and policies of the proposed Housing Element would be required to undergo an environmental review process that would identify potential hazards associated with unstable geological units.

Under CEQA, environmental review would be required for discretionary housing development projects under these programs to identify impacts and appropriate mitigation measures associated with unstable soils. This review process, coupled with adherence to the CBC and the General Plan policies described above, would further ensure that impacts from discretionary projects under proposed programs would be avoided.

b. Housing Sites
i. Angwin
As discussed in Section D.1.b.i above, Angwin Site A has the potential for liquefaction in the alluvial deposits that underlie the site. Because these liquefiable materials are adjacent to an incised channel, lateral spreading can occur. This would be a significant impact. Angwin Site B is underlain by relatively hard volcanic tuff bedrock at a shallow depth, which provides a stable geologic unit, so impacts on this site would be less than significant.
ii. Moskowite Corner
Moskowite Corner Sites A and B are underlain by bedrock, which provides a stable geologic unit. Therefore, future development on these sites would pose a less-than-significant impact.

iii. Spanish Flat
Due to the presence of fill areas, the majority of the Spanish Flat sites have the potential to pose impacts related to unstable geological units. On Spanish Flat Site A, the presence of a moderately large, undocumented fill upslope of the site is a significant concern. It is likely that this fill was not placed in accordance with current engineering standards and therefore could experience some settlement or instability if the area is developed without remediation. On Spanish Flat Site B, the central portion of the site above the maintenance building contains a relatively large fill. Based on its appearance, it is unlikely that this fill was placed according to current engineering standards. Therefore it is likely that the fill could experience settlement or instability unless proper mitigation measures are incorporated into the project. On Spanish Flat Site C, the existing level pad area includes extensive cut and fill. It is not known whether fills were placed according to current engineering standards, therefore it might be necessary to excavate and recompact on-site fills. On Spanish Flat Site E, some grading has occurred within the site and some fill has been placed along its eastern margin. This fill was apparently not placed in accordance with the current engineering standards; therefore structures placed on that fill could experience significant settlement. On Spanish Flat Site F, the principal concern for development of this site would be the potential for settlement or instability within the existing fill.

The presence of these fill areas on Spanish Flat Sites A, B, C, E and F, and the likelihood that the fills were not placed in accordance with current engineering standards, creates the potential for unstable soils. However, the CBC contains requirements that questionable soils be investigated and standards pertaining to building construction in fill material. Compliance with the CBC will ensure that risks associated with unstable soils are reduced to less-than-significant levels.
4. Location on Expansive Soil

a. Programs and Policies

It is anticipated that the housing units built under the proposed Housing Element will be located throughout the county. It is possible that some of these housing units could be proposed for sites on expansive soils. New development under the programs and policies of the proposed Housing Element could therefore potentially be exposed risk to life or property.

However, development projects proposed under the programs of the proposed Housing Element would be required to comply with the CBC, which contains building standards that reduce risks associated with expansive soils through safe building design. The CBC also requires that in areas likely to have expansive soil, the building official must require tests to confirm whether expansive soils exist. Adherence to the CBC will ensure that impacts would be reduced to less-than-significant levels.

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7 Geotechnical investigation reports prepared by Treadwell & Rollo, dated January 23, 2007, and May 21, 2007

In addition, individual development projects proposed under three of the programs in the proposed Housing Element – the density bonus for mobile home parks, accessory units on Commercial Limited/Commercial Neighborhood parcels and redesignations in the Monticello Road Rural Residential Area programs – would be subject to discretionary review from the County. Therefore, development projects under these programs would be subject to additional review for compliance with General Plan policies and other regulations, including the Safety Element of the Napa County General Plan and CEQA.

Policy SAF-4 in the Napa County General Plan’s Safety Element states that the County will encourage intergovernmental cooperation to provide a high level of services during a disaster. Under CEQA, environmental review would be required for discretionary housing development projects under these programs to identify impacts and appropriate mitigation measures associated with expansive hazards. This review process, coupled with site-specific geotechnical investigations required under the General Plan and adherence to the CBC, would further ensure that impacts from discretionary projects under proposed programs would be avoided.

b. Housing Sites

The soil conditions on all of the housing sites and throughout much of Napa County are considered to be moderately expansive. Expansive soils undergo a significant volume change as a result of wetting or drying. This volume change can cause damage, such as heaving and cracking, to improperly designed foundations and pavements. Where buildings are constructed in areas containing expansive soils, this impact can be effectively mitigated through the use of appropriate foundations, by capping expansive soils with a layer of non-expansive fill, or by lime treatment. Typical mitigation measures for pavements include special pavement design and/or subexcavation of expansive soils.

In addition, adherence to the CBC would reduce the impacts of expansive soils on new development to less-than-significant levels.
5. Incapable Soils to Support Wastewater Disposal Systems

a. Programs and Policies
It is anticipated that the housing units built under the programs and policies of the proposed Housing Element will be located throughout the county. The growth and development expected under the proposed Housing Element would involve the expanded use of septic systems in the county. It is possible that some of these housing units could be proposed for sites incapable of supporting wastewater systems. However, compliance with the provisions of Title 13, Division II of the County Code would ensure that septic systems are designed and operated adequately to avoid system failures. Therefore, the impact is considered to be less than significant.

b. Housing Sites
i. Moskowite Corner
There is no wastewater utility in the Moskowite Corner area. Instead, existing development is served with septic systems. The Central Valley Regional Water Quality Control Board must review and approve all development proposals that include septic systems to ensure that all components of the system meet detailed design criteria in order to prevent water pollution and avoid the creation of public health hazards. This review and approval process would ensure that the septic system would be located on soils that can support the system. In addition, Title 13, Division II of the Napa County Code ensures that septic systems are designed and operated adequately to avoid system failures. Therefore, the impact is considered to be less than significant.

ii. Angwin, Spanish Flat and Napa Pipe
Future development on the Angwin, Spanish Flat and Napa Pipe sites would be served by existing sewer systems and wastewater infrastructure (possibly with necessary adjustments and expansions). The Angwin sites would be served by the Pacific Union College sewer system; the Spanish Flat sites would be served by the Spanish Flat Water District; and the Napa Pipe sites would be served by the Napa Sanitation District. Because none of these sites would require septic tanks, there would be no impact related to soils incapable
of adequately supporting the use of septic tanks or wastewater disposal systems.

6. Exposure to Risk Involving Flooding from Levee or Dam Failure, or Inundation by a Seiche or Tsunami
   a. Programs and Policies
      It is anticipated that the housing units built under the proposed Housing Element will be located throughout the county. It is therefore possible that new residents and structures could be exposed to risks associated with flooding from levee or dam failure. As described in Section B, Existing Conditions, potential for damage caused by tsunamis is considered low given that the county is not directly exposed to the open ocean and that it lacks bay front. While seiches are possible along some of the county’s larger reservoirs, development is restricted along these shorelines. However, there are many dams and levees in Napa County, which could fail during an earthquake event.

      However, Napa County restricts development on flood plains through its Floodplain Management Ordinance (Chapter 16.04 of the Napa County Code), which requires permits for all development activities within special flood hazard areas. In addition, the CBC contains standards to ensure that measures to address flood hazards are incorporated into building designs and building siting. Compliance with these regulations would reduce impacts related to placing housing or structures in a flood hazard area related to levee or dam failures to less-than-significant levels.

   b. Housing Sites
      i. Angwin, Moskowite Corner and Spanish Flat
         None of the Angwin, Moskowite Corner or Spanish Flat housing sites are located downstream of a levee or dam\(^9\) and impacts related to loss, injury or death as a result of a failure of a levee or dam are therefore considered to be less than significant.

ii. Napa Pipe
There is moderate to high risk of levee failure in the southern portion of the Napa Valley. This is due to weak foundation materials that are believed to be present in this region, and would especially affect older levees that were not constructed using modern standards. The Napa Pipe sites are located in the inundation areas of the Milliken Dam and Conn Dam. Although placing people or structures could result in risk of loss, injury or death, compliance with the CBC, which requires that measures to address flood hazards are incorporated into building designs and building siting, would ensure that impacts would be less than significant.

c. Conservation and Safety Element Updates
As part of this project, the General Plan would be updated to identify additional information about flood hazards, including dam failure inundation maps, and establish additional goals, policies and objectives to protect the community from flooding risk. This change to the General Plan would reduce impacts related to exposure to flood risks resulting from a dam or levee failure. Therefore, the update to the Safety Element would have a beneficial impact.

7. Loss of a Known Mineral Resource of Statewide Importance or Locally Important Mineral Resource Recovery Site
a. Programs and Policies
As noted above, Syar Quarry is currently the only significant mining operation in Napa County. It is anticipated that the housing units built under the proposed Housing Element will be located throughout the county. It is possible that some of these housing units could be proposed for sites containing mineral resources. However, new units constructed under programs encouraging second units, farmworker housing, increased density in mobile home parks, and accessory units on CL/CN parcels would most likely be constructed on parcels that are already developed with residential buildings, commercial buildings, or intensive agriculture, where known mineral resources are unlikely to exist. It is anticipated that housing development under the programs and policies of the proposed Housing Element would not alter
existing mineral extraction uses, result in the substantial loss of available aggregate resources or interfere with any mineral recovery sites. Thus, impacts related to mineral resources would be less than significant.

b. Housing Sites
There are no existing mineral resources or mineral resource extraction uses on or near any of the potential housing sites. The Syar Quarry is located in proximity to the Napa Pipe housing sites, but development of the Napa Pipe sites is not proposed to interfere with the quarry’s activities. Please see also Mitigation Measure LU-1, which ensures that Napa Pipe residents would not experience substantial noise or vibration from nearby quarrying and transport. Future development on the housing sites would not alter existing mineral extraction uses, result in the substantial loss of available aggregate resources or interfere with any mineral recovery sites. Thus, no impact related to mineral resources would occur.

E. Cumulative Impacts

The 2007 Napa County General Plan EIR found four significant and unavoidable impacts related to geology and soils in Napa County:

- Land uses and development under the proposed Napa County General Plan Update may expose people, structures, and development to ground shaking as a result of earthquakes resulting in the risk of loss, injury, or death.

- Land uses and development under the proposed Napa County General Plan Update may expose people, structures, and development to seismic-related ground failures including surface fault rupture, lateral spreading, lurching, liquefaction, as well as potential failure of dams and levees resulting in the risk of loss, injury, or death.

- Land uses and development under the proposed Napa County General Plan Update may expose people, structures, and development to slow or rapidly occurring down slope earth movement resulting in the risk of
loss, injury, or death. This type of hazard can be triggered seismically, result from seasonal saturation of soils, erosion, or grading activities.

Land uses and development under the proposed Napa County General Plan Update may expose people, structures, and development to the damaging effects of ground subsidence resulting in the risk of loss, injury, or death. This type of hazard can be triggered seismically, result from seasonal saturation of soils, or result from grading activities.

1. Exposure of People or Structures to Seismic-Related Risk
Implementation of the proposed Housing Element will bring new structures and residents to the county, potentially building on areas with seismic hazards. CBC regulations, as well as other regulatory processes, will ensure that program-related impacts are reduced to a less-than-significant level. Although significant impacts on the housing sites related to seismic risks can be mitigated to a less-than-significant level by following the mitigation measure proposed in Section F below, the Housing Element would increase the county’s population and the number of structures with a potential for seismic-related risk. Therefore, the project would have a cumulatively considerable impact related with seismic-related ground shaking and ground failure.

2. Location on an Unstable Geological Unit or Soil
The 2007 General Plan Draft EIR found that the General Plan would result in two significant and unavoidable impacts by exposing people or structures to risks associated with downslope earth movement and ground subsidence. Such risks could be triggered seismically or may result from seasonal saturation of soils, erosion or grading activities. Implementation of the proposed Housing Element will bring new structures and residents to the county, potentially building on areas with geologic hazards. However, CBC and other regulations will ensure that program-related impacts are reduced to a less-than-significant level. In addition, significant impacts on the housing sites related to geologic risks can be mitigated to a less-than-significant level by following the mitigation measure proposed in Section F below. Therefore, the project would not contribute to these cumulative impacts from the 2008 General Plan.
F. Impacts and Mitigation Measures

Impact GEO-1: Housing developed on any of the proposed housing sites could result in the exposure of people, structures and/or property to seismic ground shaking or other geologic risks.

Mitigation Measure GEO-1: Consistent with Napa County General Plan Policy SAF-8, prior to development of all housing sites, a design-level geotechnical report shall be prepared by a qualified geotechnical engineer and engineering geologist. The report shall include a detailed geologic map showing all landslides, fill areas, erosion areas, faults and other pertinent geologic and seismic features. The report shall include recommendations for fill placement, cut and fill slope inclinations, slope stabilization, old fill mitigation, liquefaction mitigation, earthquake design criteria, treatment of expansive soils and surface and subsurface drainage. In addition, the report shall provide design criteria for facilities such as retaining walls, pavements, and foundations. The report shall be based on adequate subsurface investigation. At a minimum, subsurface investigations shall be conducted in all areas where cut or fill slopes greater than ten feet in vertical height are planned.

Potentially unstable slopes shall be mitigated such that the risk of instability during the life of the project is very low. Slope instability can be effectively mitigated through the use of relatively flat slopes, retaining walls, or reconstructing slopes with compacted fill. Specific measures shall be included in the design-level geotechnical report.

It may be desirable to divide the geotechnical investigations into planning-level and design-level phases. At a minimum, the planning-level

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Mitigation Measures GEO-1, GEO-3a, GEO-3b, GEO-4, GEO-5, GEO-6a, GEO-6b, GEO-7 and GEO-8 from the 2004 EA are not included in this Draft EIR. These mitigation measures are either encompassed by Mitigation Measure GEO-1 in this Draft EIR, or they are adequately addressed by other regulations, as described in the Impact Discussion (Section D).
phase shall be completed prior to approval of the Tentative Map. The
design-level report shall be completed prior to approval of the final grad-
ing plan.

Cut and fill slopes shall be constructed in accordance with modern geo-
technical standards, including the County grading ordinance and the In-
ternational Building Code. The applicable standards shall be those in ef-
fect at the time the grading plan accepted by the County.

A geotechnical engineer shall sign improvement plans and approve them
as conforming to their recommendations prior to parcel/final map ap-
proval. The geotechnical engineer shall also assume responsibility for in-
spection of the work and shall certify to the County, prior to acceptance
of the work that the work performed is adequate and complies with its
recommendations. Additional soils information may be required by the
Chief Building Inspector during the plan check of individual building
plans in accordance with the International Building Code and California
Building Code.

Significance After Mitigation: Less than significant.

Impact GEO-2: The Housing Element would increase the county’s popula-
tion and the number of structures with a potential for seismic-related risk.
Thus the proposed Housing Element would have a cumulatively considerable
impact related to seismic-related ground shaking and ground failure.

There are no feasible measures that could mitigate this cumulative impact to a
less-than-significant level. Therefore, the cumulative impact remains signifi-
cant and unavoidable.
This chapter describes the potential effects of the proposed Housing Element on hydrology and water quality, as well as the proposed updates to the Conservation and Safety Elements to be in compliance with AB 162. All relevant information related to the regulatory framework and existing conditions identified in Chapter 4.11 of the 2007 Napa County General Plan Draft EIR is incorporated by reference and briefly summarized. New and updated information pertaining to hydrology and water quality regulations and existing conditions is also included.

A. Regulatory and Policy Framework

Section 4.11.2 of the 2007 Napa County General Plan Draft EIR contains a detailed description of hydrology and water quality regulations in the project area that includes federal, State and local regulations and policies.

Federal programs and regulations relevant to hydrology and water quality include the National Flood Insurance Program (NFIP), Executive Order 11988, the US Bureau of Reclamation (USBR) and the Clean Water Act (CWA). The NFIP was passed by Congress in 1973 to restrict development on floodplains in order to reduce the need for publicly-funded flood control structures. The NFIP is administered by the Federal Emergency Management Agency (FEMA) and provides subsidized flood insurance to communities that comply with FEMA regulations. Under the NFIP, FEMA issues Flood Insurance Rate Maps, which show the flood hazard zones in participating communities. Executive Order 11988 (Floodplain Management) requires federal agencies constructing, permitting or funding a development project in a floodplain to avoid incompatible floodplain development, comply with NFIP standards and preserve floodplain values. The USBR built, and now owns, the Monticello Dam on Putah Creek, which forms Lake Berryessa. The USBR also manages property along Lake Berryessa in the county and manages Lake Berryessa visitor services. The CWA regulates the water quality of discharges into the “waters of the United States,” which include wetlands and perennial and intermittent stream channels. Under the Section 404 of the
CWA, the US Army Corps of Engineers is authorized to set standards and issue permits related to such discharges.

The State regulatory framework regarding hydrology and water quality includes the Porter-Cologne Water Quality Control Act, State Implementation Program (SIP), California Fish and Game Code, Title 22 and regulations related to dam safety and impaired water bodies. The Porter-Cologne Water Quality Control Act coordinates water quality controls by requiring that State agencies and advisory groups work together to implement State non-point source pollution regulations. The SIP contains policies and criteria regarding discharges of toxic pollutants into the State’s inland surface waters, enclosed bays and estuaries. In addition, the SIP creates a statewide, consistent approach for permitting such discharges. California Fish and Game Code Sections 1601 through 1607 apply to any work within 100-year floodplains that affects the flows, channels and banks of rivers, streams and lakes. Title 22 of the California Code of Regulations contains drinking water and reclaimed water standards. Title 22 establishes maximum contaminant levels for public drinking water systems and outlines State reclaimed water standards, which are administered by the California Department of Health Services in coordination with the Regional Water Quality Control Board (RWQCB). Dam safety in California is administered by the Department of Water Resources, which reviews plans for constructing new dams and altering or removing existing dams and performs inspections during dam construction and operation. Impaired water bodies are those listed by the State Water Resources Control Board (SWRCB) under CWA Section 303(d). Napa County impaired water bodies include the Napa River and its tributaries, the Putah Creek/Lake Berryessa Watershed and San Pablo Bay (into which the Napa River drains).

The State regulatory framework also includes surface water and groundwater rights. Surface water rights in California are administered through the SWRCB and include riparian and appropriative rights. Riparian surface water rights are associated with property adjacent to a watercourse, while appropriative surface water rights are rights granted for diversions and transfers
of water to non-riparian land. Groundwater rights in California include overlying and appropriative rights. Overlying groundwater rights are similar to riparian rights, and apply to parcels overlying a groundwater basin. Appropriative groundwater rights, like appropriative surface water rights, apply to groundwater extractions used on lands that do not overly the groundwater in question.

Relevant local regulations and programs include the Napa County Code, the Napa County Flood Control and Water Conservation District (NCFCWCD), the Napa Sanitation District and the Solano Irrigation District, as well as other local entities that manage and own reservoirs in Napa County. The relevant sections of the Napa County Code include the County’s Conservation Regulations (Chapter 18.108), floodplain management provisions (Chapter 16.04) and groundwater ordinance (Chapter 13.15). The NCFCWCD conserves and manages flood and stormwater, maintains the county’s watersheds and plans for the county’s water supply needs. The Napa Sanitation District is an independent local agency that provides wastewater collection, treatment and disposal services in the City of Napa and surrounding unincorporated areas. The Solano Irrigation District owns and operates the Monticello Hydroelectric Power Plant, which is located at Lake Berryessa. Other local entities that manage and operate reservoirs in Napa County include: the City of Napa, which manages the Lake Hennessey and Milliken Reservoir; the Howell Mountain Water Company, which manages Friesen Lakes; the City of St. Helena, which manages Bell Canyon Reservoir; the Veterans Home of California, Plant Operations, which manages Rector Reservoir; the City of Calistoga, which manages Kimball Reservoir and the City of Vallejo, which manages Lake Curry and Lake Madigan.

This section contains regulatory and policy information pertaining to Assembly Bill 162, the Napa County General Plan and post-construction erosion control requirements recently adopted by Napa County.
1. Assembly Bill 162

Assembly Bill (AB) 162 requires that, at the time of the first Housing Element Update after January 1, 2009, cities and counties update their General Plan Conservation and Safety Elements to identify floodplains that could accommodate floodwater for groundwater recharge and stormwater management. Therefore, as part of this project, Napa County proposes to update the Conservation and Safety Elements to respond to these statutory requirements by identifying additional information about flood hazards and establishing additional goals, policies and objectives to protect the community from flooding risk. The specific text of these amended policies is available at the Napa County Department of Conservation, Development and Planning, or online at www.co.napa.ca.us.

2. Napa County General Plan

The Conservation Element of the Napa County General Plan contains the following policies related to hydrology and water quality.

Policy CON-27: The County shall enforce compliance and continued implementation of the intermittent and perennial stream setback requirements set forth in existing stream setback regulations, provide education and information regarding the importance of stream setbacks and the active management and enhancement/restoration of native vegetation within setbacks and develop incentives to encourage greater stream setbacks where appropriate.

Policy CON-44: The County shall identify, improve, and conserve Napa County’s surface water resources through the following measures:

a. Evaluate and develop land use policies resulting in the appropriate density and mix of impervious surface and stable vegetation cover to improve water quality and reduce surface water pollution and siltation within domestic water supply watersheds.

b. Encourage public agencies and private individuals to explore environmentally sensitive ways to store winter runoff in consultation with the State Department of Water Resources and other regulatory agencies.

c. Promote a balanced approach to managing reservoir outflows, particularly municipal supply reservoirs, through coordination with cities and
town to maintain a reliable water supply for domestic uses, minimize flooding and preserve fish habitat and riparian vegetation.

d. Work with other agencies to develop a comprehensive understanding of potential deficiencies in surface water supplies, and coordinate with private property owners on a voluntary basis to collect additional surface water data and implement an expanded voluntary monitoring effort to ensure development of effective water management and conservation strategies where appropriate.

**Policy CON-45:** Protect the County’s domestic supply drainages through vegetation preservation and protective buffers to ensure clean and reliable drinking water consistent with state regulations and guidelines. Continue implementation of current Conservation Regulations relevant to these areas, such as vegetation retention requirements, consultation with water purveyors/system owners, implementation of erosion controls to minimize water pollution and prohibition of detrimental recreational uses.

**Policy CON-47:** The County shall comply with applicable Water Quality Control/Basin Plans as amended through the Total Maximum Daily Load (TMDL) process to improve water quality. In its efforts to comply, the following may be undertaken:

a. Monitoring water quality in impaired waterbodies identified by the Regional Water Quality Control Board(s).

b. Addressing failing septic systems in the vicinity of Murphy, Browns Valley, and Salvador Creeks and throughout the County, should they be found to exist.

c. Retrofitting County-maintained roads to reduce sediment caused by runoff.

d. Supporting voluntary habitat restoration and bank stabilization efforts, with particular focus on the main stem and main tributaries of the Napa River.

e. Ensuring continued effectiveness of the National Pollution Discharge Elimination System (NPDES) program and stormwater pollution prevention.
f. Ensuring continued effectiveness of the County’s Conservation Regulations related to vineyard projects and other earth-disturbing activities.

g. Addressing effects related to past and current mining, grazing, and other activities to the extent feasible.

h. Amending the County’s Conservation Regulations or County Code to address excessive sediment delivered to waterways as required by state law, particularly as it relates to private roads and rural unimproved (i.e., dirt or gravel) roads.

i. Developing outreach and education programs to inform land owners and managers about improving surface water quality (e.g. rural and private road maintenance, soil and vegetation retention, construction site management, runoff control, etc.) and cooperating with other governmental and non-governmental agencies seeking to establish waiver or certification programs.

Policy CON-48: Proposed developments shall implement project-specific sediment and erosion control measures (e.g. erosion control plans and/or stormwater pollution prevention plans) that maintain pre-development sediment erosion conditions or at minimum comply with state water quality pollution control (i.e., Basin Plan) requirements and are protective of the County’s sensitive domestic supply watersheds. Technical reports and/or erosion control plans that recommend site-specific erosion control measures shall meet the requirements of the County Code and provide detailed information regarding site specific geologic, soil, and hydrologic conditions and how the proposed measure will function.

Policy CON-49: The County shall develop and implement a water quality monitoring program (or programs) to track the effectiveness of temporary and permanent Best Management Practices (BMPs) to control soil erosion and sedimentation within watershed areas and employ corrective actions for identified water quality issues (in violation of Basin Plans and/or associated TMDLs) identified during monitoring.
Policy CON-50: The County will take appropriate steps to protect surface water quality and quantity, including the following:

a. Preserve riparian areas through adequate buffering and pursue retention, maintenance, and enhancement of existing native vegetation along all intermittent and perennial streams through existing stream setbacks in the County’s Conservation Regulations (also see Policy CON-27 which retains existing stream setback requirements).

b. Encourage flood control reduction projects to give full consideration to scenic, fish, wildlife, and other environmental benefits when computing costs of alternative methods of flood control.

c. The County shall require discretionary projects to meet performance standards designed to ensure peak runoff in 2-, 10-, 50-, and 100-year events following development is not greater than predevelopment conditions.

d. Maintain minimum lot sizes of not less than 160 acres in Agriculture, Watershed, and Open Space (AWOS) designated areas to reflect desirable densities based on access, slope, productive capabilities for agriculture and forestry, sewage disposal, water supply, wildlife habitat, and other environmental considerations.

e. In conformance with National Pollution Discharge Elimination System (NPDES) requirements, prohibit grading and excavation unless it can be demonstrated that such activities will not result in significant soil erosion, silting of lower slopes or waterways, slide damage, flooding problems, or damage to wildlife and fishery habitats.

f. Adopt development standards, in conformance with NPDES Phase II requirements, for post-construction stormwater control.

g. Address potential soil erosion by maintaining sections of the County Code that require all construction-related activities to have protective measures in place or installed by the grading deadlines established in the Conservation Regulations. In addition, the County shall ensure enforceable fines are levied upon code violators and shall require violators to perform all necessary remediation activities.

h. Require replanting and/or restoration of riparian vegetation to the extent feasible as part of any discretionary permit or erosion control plan ap-
proved by the County, understanding that replanting or restoration that enhances the potential for Pierce’s Disease or other vectors is considered infeasible.

i. Encourage management of reservoir outflows (bypass flows) to maintain fish life and riparian (streamside) vegetation.

j. Encourage minimal use of chemical treatment of reservoirs to prevent undue damage to fish and wildlife resources.

k. Prohibit new septic systems in areas where sewage treatment and disposal systems are available and encourage new sewage treatment and disposal systems in urbanized areas where there is high groundwater recharge potential and existing concentrations of septic systems.

Policy CON-51: Recognizing that groundwater best supports agricultural and rural uses, the County discourages urbanization requiring net increases in groundwater use and discourages incorporated jurisdictions from using groundwater except in emergencies or as part of conjunctive-use programs that do not cause or exacerbate conditions of overdraft or otherwise adversely affect the County’s groundwater resources.

Policy CON-53: The County shall ensure that the intensity and timing of new development are consistent with the capacity of water supplies and protect groundwater and other water supplies by requiring all applicants for discretionary projects to demonstrate the availability of an adequate water supply prior to approval. Depending on the site location and the specific circumstances, adequate demonstration of availability may include evidence or calculation of groundwater availability via an appropriate hydrogeologic analysis or may be satisfied by compliance with County Code “fair-share” provisions or applicable State law. In some areas, evidence may be provided through coordination with applicable municipalities and public and private water purveyors to verify water supply sufficiency.

Policy CON-55: The County shall consider existing water uses during the review of new water uses associated with discretionary projects, and where hydrogeologic studies have shown that the new water uses will cause signifi-
cant adverse well interference or substantial reductions in groundwater discharge to surface waters that would alter critical flows to sustain riparian habitat and fisheries or exacerbate conditions of overdraft, the County shall curtail those new or expanded water uses.

In addition, the Safety Element of the Napa County General Plan contains the following policies related to flood safety.

**Policy SAF-3:** The County shall evaluate potential safety hazards when considering General Plan Amendments, rezonings, or other project approvals (including but not limited to new residential developments, roads or highways, and all structures proposed to be open to the public and serving 50 persons or more) in areas characterized by:
1. Slopes over 15 percent,
2. Identified landslides,
3. Floodplains,
4. Medium or high fire hazard severity,
5. Former marshlands, or
6. Fault zones.

**Policy SAF-23:** New construction in floodplains shall be placed above the established flood elevation or flood-proofed to provide protection to the same level.

**Policy SAF-25:** The review of new proposed projects in a floodway shall include an evaluation of the potential flood impacts that may result from the project. This review shall include an evaluation of the project’s potential to affect flood levels on the Napa River; the County shall seek to mitigate any such effects to ensure that freeboard on the Napa River in the area of the Napa River Flood Protection Project is maintained.
3. Napa County Stormwater Management and Discharge Control Ordinance

On June 22, 2004, Napa County adopted its Stormwater Management and Discharge Control Ordinance (Napa County Code Chapter 16.28). To implement this Ordinance, Napa County adopted a policy for construction site runoff control requirements on December 12, 2006, and subsequently adopted a policy for post-construction runoff management requirements on June 3, 2008. Projects that disturb more than 10,000 square feet of soil, move more than 50 cubic yards of soil, disturb soils on slopes 15 percent or greater, or disturb soils within 50 feet of a waterway or storm drain that leads to a receiving water (Waters of the State) must prepare a Stormwater Quality Management Plan or a Stormwater Pollution Prevention Plan prepared, depending on the amount of soil disturbance.

Site Design and Source Control design standards or Site Design, Source Control and Treatment Control design standards apply to the following types of projects, depending on the intensity of the use or development:

- Uses that would pose water quality risks, such as an automotive repair shop or retail gasoline outlet.
- Large residential or commercial developments that exceed specific development thresholds.
- Large parking lots.
- New or redeveloped impervious surfaces 10,000 square feet or greater; hillside development on slopes greater than 30 percent.
- Construction or reconstruction of roadways.
- Installation of new or alteration of existing stormdrains.

The design standards for these projects include Best Management Practices (BMPs) that prevent or reduce pollutant discharge into receiving waters, and that are a permanent component of the development project.
B. Existing Conditions

Section 4.11.1 of the 2007 Napa County General Plan Draft EIR contains a detailed description of the existing hydrology and water quality conditions in Napa County, including conditions pertaining to surface water, precipitation, streams, flooding, water quality and groundwater resources.

The mountain ridges of Napa County divide the county into three principal watersheds: Napa River, Putah Creek/Lake and Suisun Creek. The Napa River is the largest river in Napa County. It flows through the lowlands of Napa Valley before draining into San Pablo Bay. The Napa River Watershed is located in the western portion of the county. To the east of the Napa River Watershed is the Putah Creek/Lake Berryessa Watershed. Putah Creek flows southward from Lake County and drains into Lake Berryessa, which is located in the northeastern area of the county. Lake Berryessa is the largest body of surface water in Napa County and holds approximately 1.6 million acre-feet of water. The outlet of Lake Berryessa is the Monticello dam, located at the eastern border of the county, through which water flows out of the county and into the Sacramento River. The Suisun Creek Watershed is located south of the Napa River and Putah Creek/Lake Berryessa Watersheds. The upper portion of Suisun Creek is located in Napa County and the southern portion is located in Solano County.

The major aquifers of the County are the North Napa Valley Groundwater Basin and the Milliken-Sarco-Tulocay Basin. Smaller aquifers in the county include the Carneros Groundwater Basin and small basins within the Putah Creek subbasin and the Lake Berryessa Basin.

The county’s climate brings distinct wet and dry seasons, with approximately 90 percent of the year’s precipitation occurring between November and April. In general, precipitation in Napa County increases from south to north and with increasing elevation. Precipitation is lowest in the southern area of the county and near Lake Berryessa. Annual precipitation levels vary throughout the county, ranging from 22.5 to 75 inches per year.
Flooding conditions in Napa County are intricately tied to land uses. Development that brings increases in pervious surfaces, such as roofs, driveways and parking lots, increases the potential for flooding. The result of these increases in impervious surfaces is that runoff depth and velocities increase, even as the amount of rainfall remains constant. Development can also result in structures being placed in areas that are prone to flooding during certain times of the year. Increased runoff potential, coupled with development in flood-prone areas, can cause health and safety concerns.

C. Standards of Significance

A hydrologic or water quality impact is considered significant if implementation of the Housing Element Update would result in any of the following (based on State CEQA Guidelines Appendix G):

1. Violation of any water quality standard or waste discharge requirement.

2. Substantial alteration of the existing draining pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion, situation and/or environmental harm on- or off-site. Alteration of draining conditions associated with erosion would be considered substantial if changes in a waterway’s flow velocities extends the existing duration of scour events. Scour events would include any peak flows and the duration above a 2-year storm or bankfull event.

3. Creation of or contribution to runoff water that would provide substantial additional sources of polluted runoff. Changes in water quality would be considered substantial if there is a net increase in sediment, nutrients or pathogens in the Napa River or its associated tributaries, or there is a net increase in any other pollution source associated with an impaired waterway (under Section 303d of the Clean Water Act). In addition, changes in water quality would also be considered substantial if they were in conflict with the Basin Plan or the Policy for Implementa-
tion of Toxic Standards for Inland Surface Waters, Enclosed Bay and Estuaries of California.

4. A substantial depletion of groundwater supplies or substantial interference with groundwater recharge such that there would be a net deficit in aquifer volume or lowering of the local groundwater table level. Depletion of groundwater would be considered substantial if it resulted in a net increase in groundwater usage in the Milliken-Sarco-Tulocay groundwater basin or result in groundwater extraction that would exceed the amount of groundwater in storage over the long term (normal, dry and multiple dry years).

5. Loss of groundwater flow to surface waters due to future groundwater extraction (i.e., circumstances where a waterway is currently receiving flows from groundwater discharge) to the extent that it adversely affects existing biological resources (e.g. fisheries and riparian habitat) that are supported by such flows.

6. Substantial increase in the rate or amount of surface runoff in a manner that would result in flooding on- or off-site.

7. Creation of or contribution to runoff water that would exceed the capacity of existing or planned stormwater drainage systems.

8. Placement of housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map, or other flood hazard delineation map.

9. Placement of structures within a 100-year flood hazard area that would impede or redirect flood flows.

10. Exposure of people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of a failure of a levee or dam.
D. Impact Discussion

This section discusses the potential impacts to Napa County’s hydrology and water quality as a result of the policies, programs and implementation of the proposed Housing Element. For most standards of significance, impacts are discussed separately in relation to the proposed Housing Element’s programs and housing sites. However, the stormwater drainage system standard in Section D.5 below discusses housing programs and sites together because they have similar impacts. In addition, the proposed updates to the Conservation and Safety Elements to be in compliance with AB 162 are discussed separately for pertinent standards.

1. Violation of a Water Quality Standard or Waste Discharge Requirements
   a. Programs and Policies
   The proposed Housing Element Update includes goals, objectives, policies and programs to assist the County in assessing housing needs, providing housing directly, and facilitating the construction of needed units. Through the implementation of programs, the County proposes to accommodate up to 153 units. These programs include second unit production and second units on parcels zoned Agricultural Preserve, farm worker housing production, density bonus for mobile home parks with Planned Development zoning, accessory units on parcels zoned Commercial Limited (CL) or Commercial Neighborhood (CN) and redesignations in the Monticello Road Rural Residential area.

   New development under the programs and policies of the proposed Housing Element would be subject to applicable Total Maximum Daily Load (TMDL) implementation measures, per the RWQCB. These implementation measures are specifically designed to reduce the impacts of existing and proposed development on water quality in the county’s water bodies, such as the Napa River. The RWQCB is currently revising new sediment TMDL standards for the Napa River. Following adoption by the RWQCB, the standards will then be sent to the State Water Resources Board for approval. The RWQCB is proposing to adopt both sediment TMDL standards and a habitat enhance-
ment plan to ensure healthy habitats. The proposed TMDL standards and habitat enhancement plan include an implementation plan, which contains several actions to achieve TMDL targets and habitat enhancement goals.

New development constructed as a result of programs and polices in the Housing Element would also be required to implement measures to ensure compliance with all County, State and federal water quality standards, including those found in the County’s Conservation Regulations, the California Fish and Game Code and the Clean Water Act. Compliance with applicable regulations would reduce water quality standard and waste discharge requirement impacts to less-than-significant levels.

In addition, individual development projects proposed under three of the programs in the proposed Housing Element – the density bonus for mobile home parks, accessory units on Commercial Limited/Commercial Neighborhood parcels and redesignations in the Monticello Road Rural Residential Area programs – would be subject to discretionary review from the County. Therefore, development projects under these programs would be subject to additional review for compliance with General Plan policies and other regulations, including the Conservation Element of the Napa County General Plan and CEQA.

The policies of the Napa County General Plan Conservation Element would reduce groundwater flow impacts on biological resources from housing developed under these three programs. Policy CON-47 requires that the County comply with applicable Water Quality Control/Basin Plans as

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amended through the TMDL process to improve water quality. This requirement affects the County’s land use decisions, including decisions about housing development under these programs and policies. In addition, Policy CON-48 requires that proposed developments comply with state water quality pollution control requirements.

CEQA also requires environmental review of discretionary housing development projects that would be built under these programs. This environmental review would include a site-specific assessment of water quality standard impacts for individual projects. Compliance with the policies of Napa County’s General Plan and the required environmental review process would further ensure that water quality standard impacts from discretionary projects under proposed programs would be less than significant.

b. Housing Sites
Development on any of the housing sites would be subject to applicable TMDL implementation measures as adopted by the RWQCB. Such measures include actions to reduce and avoid erosion, enhance habitats and protect water flows. In addition, development on the housing sites would be required to implement measures to ensure compliance with all County, State and federal water quality standards. Therefore, the proposed housing sites would have a less-than-significant impact regarding violations of water quality standards or waste discharge requirements.

In addition, the Napa Pipe sites are subject to a Remediation Action Plan (RAP) that identifies and recommends techniques for soil and groundwater remediation. Prior to remediation, all necessary permits would need to be obtained. To remediate the site, the Draft RAP recommends that a Remedial Design and Implementation Plan (RDIP) be developed, that 122,000 cubic yards of saturated and unsaturated soils be excavated and that soils and groundwater be managed consistent with the RDIP, which has not yet been developed. During excavation, water would be collected and treated on-site using the existing wastewater treatment system, prior to discharging to the sanitary sewer under the wastewater treatment facility’s existing permit. Fol-
lowing excavation, the RAP recommends that backfilling on the site proceed. To prevent recontamination of the backfill, amendments would be added to the backfill that would promote biodegradation of groundwater contaminants. In addition, a combination of bio-retention, grassy swales, pervious hardscapes and other appropriate post-construction BMPs would be used to treat site runoff.  

By following the RAP and RDIP, development on the Napa Pipe sites would also result in a less-than-significant impact regarding water quality standards.

2. Alteration of an Existing Drainage Pattern or Creation of or Contribution to Runoff Water
a. Programs and Policies

Development under the proposed programs and polices could result in alterations in drainage patterns or create or contribute to runoff water. An increase in impervious surfaces from development would result in an increase in the rate or amount of runoff, and thus could result in erosion or siltation on- or off-site, or result in flooding on- or off-site, which would alter the existing drainage patterns. An increase in impervious surfaces could also increase the level of non-point source pollutants in the runoff, resulting in impaired water quality. Development would also likely involve earthmoving and other actions during construction that could lead to similar impacts to drainage patterns and runoff water.

Different development types tend to increase different kinds of pollutants in waters on- and off-site. Residential development tends to add soap from car washing and nutrients from landscaping. Sediment from developed sites is less of a problem because most of the land area tends to be landscaped and/or paved, but can be a significant impact during construction. Estimating precise pollutant concentrations in runoff from a project site is difficult because they are dependent on land use conditions, the implementation of BMPs, site

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drainage conditions, the intensity and duration of rainfall, and the climatic conditions preceding the rainfall event.

Housing developed under the proposed programs and policies will not be concentrated and will be limited in size. For instance, secondary residential units would not add significantly to the amount of impervious surface on-site, because secondary dwelling units will be limited to a maximum of 1,200 square feet. Therefore, the cumulative increase in stormwater runoff countywide is not expected to be substantial. However, an increase in runoff water could impact water quality by introducing pollutants into surface waters from development.

Implementation of the existing County policies and regulations listed below would address potential impacts related to drainage patterns and runoff.

- County Conservation Regulations Chapter 18.108 establishes stream setbacks, based on adjacent slopes, where construction of structures, earth-moving activity, grading or removal of vegetation or agricultural uses of land is prohibited.

- The Stormwater Quality Management Plan or Stormwater Pollution Prevention Plan required by County Stormwater Regulations Chapter 16.28, and the corresponding construction site runoff control policy, address runoff from construction sites. These requirements are discussed in detail in Section A.3 of this chapter.

- County Stormwater Regulations Chapter 16.28, and the corresponding post-construction runoff management policy, addresses runoff from the project site after the construction period is over and through the life of the project. Housing developed under the programs and policies of the proposed Housing Element that includes ten or more units would require the use of Site Design, Source Control and Treatment Control design standards. Housing development that involves the creation or redevelopment of impervious surfaces 10,000 square feet or greater, hillside development on slopes greater than 30 percent, construction or reconstruction of roadways, or installation of new or alteration of existing
stormdrains would require Site Design and Source Control design standards. The design standards for these projects include BMPs that prevent or reduce pollutant discharge into receiving waters, and that are a permanent component of the development project.

Development under the programs and policies of the proposed Housing Element is not expected to significantly increase the amount of impervious paving in the county due to the limited size of second units and accessory units that would be permitted under the proposed Housing Element. Furthermore, compliance with the applicable regulations and procedures described above would address potential impacts to drainage patterns and runoff as a result of the proposed programs and policies. Therefore, development under the programs and policies would result in a less-than-significant impact.

b. Housing Sites
Development of housing on any of the housing sites could result in alterations to existing drainage patterns. An increase in impervious surfaces from development would result in an increase in the rate or amount of runoff, and thus could result in erosion, siltation or flooding on- or off-site. In addition, development would likely involve earth moving and other actions during construction that could lead to similar significant impacts. However, compliance with Sections 18.108 and 16.28 of the Napa County Code would require stream setbacks and stormwater management, which would reduce potential impacts from drainage pattern alteration to less-than-significant levels.

Analysis of runoff and water quality impacts is described for each site in the sections below.

i. Angwin
Angwin Site A contains a stream that could be impacted by an increased quantity of runoff and/or impaired water quality because of an increase in pollutants in the runoff. County Conservation Regulations establish stream setbacks that range from 35 to 150 feet, depending on the slope of the land. In addition, County Code Chapter 16.28 and the corresponding construction
and post-construction runoff management policies would reduce pollution from point- and non-point sources and control erosion. Specifically, development of housing on Angwin Site A would require the use of Site Design, Source Control and Treatment Control design standards (further described above), which would include BMPs that prevent or reduce pollutant discharge, and that would be a permanent component of the development project. This results in a less-than-significant impact related to runoff and water quality.

Site B contains no waterbodies, so there is a less-than-significant impact on water quality.

**ii. Moskowite Corner**

Moskowite Corner Sites A and B are bordered by Oak Moss Creek. Site C contains a small manmade reservoir formed by an earth embankment, and Site D contains a pond and a stream. County Conservation Regulations establish stream setbacks that range from 35 to 150 feet, depending on the slope of the land. In addition, County Code Chapter 16.28 and the corresponding construction and post-construction runoff management policies would reduce pollution from point- and non-point sources and control erosion. Specifically, development would require the use of Site Design, Source Control and Treatment Control design standards, which would include BMPs that prevent or reduce pollutant discharge, and that are a permanent component of the development project. Therefore, impacts on runoff and water quality would be less than significant.

**iii. Spanish Flat**

Spanish Flat Site A has slightly-sloped topography and is adjacent to a hillside containing three ravines that contribute water and sediment into the area. In addition, a stream is present along the northwestern side of the site, and significant erosion has occurred in that area. Site C is mostly paved, although there are potential waters on-site. Site D is steeply-sloped and undeveloped, and contains a wetland. Site E is a slightly-sloped parcel that has runoff and sediment-laden water entering the site from a ravine (a Class III stream) that
extends above the site. There is also a potential waterbody on the site itself. Site F has a near-level graded area located on an otherwise moderately steep slope. The majority of the site is paved, although there is a potential water body on-site.

County Conservation Regulations establish stream setbacks of amounts that range from 35 to 150 feet, depending on the slope of the land. In addition, County Code Chapter 16.28 and the corresponding construction and post-construction runoff management policies would reduce pollution from point- and non-point sources and control erosion. Therefore, impacts on runoff and water quality would be less than significant.

There are no waterbodies on Site B, and therefore, impacts related to water quality would also be less than significant.

iv. Napa Pipe

The Napa Pipe sites are located adjacent to the Napa River and contain wetland areas. County Conservation Regulations establish river setbacks; given the flat slope of the Napa Pipe sites, the setback requirement would likely be around 35 feet. In addition, County Code Chapter 16.28 and the corresponding construction and post-construction runoff management policies would reduce pollution from point- and non-point sources and control erosion. Specifically, this development would require the use of Site Design, Source Control and Treatment Control design standards, which would include BMPs that prevent or reduce pollutant discharge, and that are a permanent component of the development project. Therefore, impacts on runoff and water quality would be less than significant.

3. Depletion of Groundwater Supplies or Recharge

a. Programs and Policies

Future housing development under the programs and policies of the proposed Housing Element would increase demand on groundwater supplies, and the associated increased well pumping could therefore result in the decline of groundwater level and accelerated overdraft. The proposed Housing Element
programs and policies could result in construction of up to 153 new dwelling units, housing 389 people, dispersed throughout Napa County. Using a water demand factor of 150 gallons per person per day,\footnote{Nakano, Gerry, Project Manager and J.J. Westra, Project Engineer, West Yost & Associates. Technical Memorandum No. 3. October 19, 2005, pages 5 to 6. This technical memorandum is provided in Appendix J of the 2007 Napa County General Plan EIR.} this amount of development could require approximately 65 acre-feet annually (afa) of water. Although some of these new housing units could utilize surface water if they are constructed within certain water districts, most new housing units would be served by groundwater, as is most of the unincorporated county.

While most of the groundwater basins in the county have adequate supply, the Milliken Sarco-Tulocay (MST) basin does not. Housing under most of the programs could occur throughout the county, including the MST, and the redesignations in the Monticello Road Rural Residential Area program would include development within the MST basin. Housing development in the MST basin could create a significant impact on groundwater supply.

- As described in Chapter 13.12.260 of the County Code, no construction, destruction or reconstruction of any well shall begin until a permit to do such work has first been obtained.

- The Napa County Groundwater Ordinance (County Code Chapter 13.15) requires a groundwater permit for projects that use groundwater, and in groundwater-deficient areas, such as the MST basin, special permits are required for all proposed groundwater withdrawals. For new residential units in the MST basin, a ministerial groundwater permit would require compliance with water use conditions, including restrictions on water usage.

- County Stormwater Regulations Chapter 16.28, and the corresponding post-construction runoff management policy, address post-construction stormwater impacts. Housing developed under the programs and policies of the proposed Housing Element that includes ten or more units would
require the use of Site Design, Source Control and Treatment Control design standards. Housing development that involves the creation or re-development of impervious surfaces 10,000 square feet or greater, hillside development on slopes greater than 30 percent, construction or reconstruction of roadways, or installation of new or alteration of existing stormdrains would require Site Design and Source Control design standards. The design standards for these projects include BMPs that prevent or reduce pollutant discharge into receiving waters, in part by limiting the amount of impervious surfaces developed as part of the project. Limiting the development of impervious surfaces would also reduce impacts on groundwater recharge.

♦ County Code Section 18.108.027 ensures that a minimum level of vegetation would be maintained on-site on lands that are in sensitive water supply drainages.

Implementation of the proposed Housing Element could potentially interfere with groundwater recharge by increasing the amount of impervious surface. However, because new housing units are expected to be located throughout the county, no one area or groundwater basin would be significantly impacted.

Housing development allowed in the MST basin as a result of programs and policies, including the redesignations in the Monticello Road Rural Residential Area, would be considered a significant impact requiring mitigation because the MST is designated as groundwater deficient.

b. Housing Sites
The Angwin sites are within the Conn Creek – Upper Reach drainage; the Moskowite Corner sites are within the Moss Creek drainage and Putah Creek watershed; the Spanish Flat sites are within the Lake Berryessa – West drainage and Putah Creek watershed; and the Napa Pipe sites are within the American Canyon basin. An increase in impervious surfaces could reduce the amount of groundwater recharge at any of the proposed housing sites. However, the sites range from 3 to 152 acres, which are small enough relative to
the groundwater basins and the rest of the unincorporated county not to significantly impact groundwater recharge. County Stormwater Regulations Chapter 16.28 and the corresponding post-construction runoff management policy require the use of BMPs that prevent or reduce pollutant discharge, in part by limiting the amount of impervious surfaces developed as part of the project. Limiting the development of impervious surfaces would also reduce impacts on groundwater recharge. Furthermore, the areas designated for housing are dispersed in four different areas in the county. Therefore, impacts to groundwater recharge are less than significant.

i. Angwin
Water for new housing in Angwin would come from four wells operated by the Pacific Union College Water Company (PUCWC), a private water company owned and operated by PUC. The PUCWC water system has the capacity to deliver 1.2 million gallons per day (gpd), and currently uses a maximum of 0.7 million gpd under peak conditions. In addition, the PUCWC has a storage capacity of 1.6 million gallons in four storage tanks. According to the water demand rate of 400 gallons per day (gpd) per dwelling unit used by PUC, the 191 units proposed on the Angwin sites would require an additional 76,400 gpd of water (or 0.076 mgd). This increase would add just over 10 percent to the current maximum daily demand for water, leaving approximately 0.43 mgd of surplus water supply capacity.

Nonetheless, community concerns about groundwater resources resulted in a new policy in the 2008 General Plan Agricultural Preservation and Land Use Element with which development on the Angwin sites may conflict. Policy AG/LU-61 states that “the existing density of development in the Angwin area and the County’s desire to be protective of groundwater supplies precludes future subdivision activity that relies on net increases in groundwater use within the Conn-Creek-Upper Reach Local Drainage.” Because the proposed development on the Angwin sites may conflict with this policy, and because there is a lot that is unknown about the area’s groundwater supply,

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this development may result in a significant impact on groundwater resources requiring mitigation.

ii. Moskowite Corner
Development in Moskowite Corner relies on surface water from the Moskowite Reservoir. However, Sites A and B propose only three and six units, respectively, so it is possible that they could rely on groundwater rather than connect to the existing water system. In addition, it is not certain whether the availability and reliability of the surface water supply from the Moskowite Reservoir will be sufficient to support housing development on all of the Moskowite Corner sites. Therefore, groundwater may be a potential alternative source of water for this development if the surface water supply is not adequate. There is not sufficient data available to determine whether there is adequate groundwater supply to serve development on the Moskowite Corner sites. Therefore, impacts related to groundwater may be significant requiring mitigation. (See Section 4.13, Public Services and Utilities, for more discussion of water supplies.)

iii. Spanish Flat
Water for the Spanish Flat area would rely on surface water from Lake Berryessa. Although there are treatment capacity and permit issues that could affect water supply for the Spanish Flat sites, Lake Berryessa provides a reliable long-term water supply, so groundwater would not be needed to serve this development. Therefore, there would be less-than-significant impacts to groundwater from the designation of the Spanish Flat sites. (See Section 4.13 for further discussion of water supplies.)

iv. Napa Pipe
The high-density multi-family units in the Napa Pipe project are assumed to include 2.2 persons per household and to generate a water demand of 75 gallons per person per day. This water demand factor is lower than the factor

6 Nakano, Gerry, Project Manager; Elizabeth Drayer, Project Engineer; and Irene Suroso, Project Engineer, West Yost Associates. Technical Memorandum with
used elsewhere in the county since these units would have significantly less yard space and landscaping than lower-density units developed in more rural areas. Using these assumptions, the 850 units included in the first phase of the Napa Pipe project would generate 157 afa of water demand.

Development on the Napa Pipe sites would rely on both groundwater and surface water. Potable water demands will rely on groundwater, while non-potable water needs will rely on surface water. According to the Draft Water Supply Assessment for Napa Pipe, there is more than sufficient groundwater supply to serve the potable water needs from development on the Napa Pipe sites. The Napa Pipe sites overlie the American Canyon Basin, which serves as a natural underground reservoir. The Sonoma Volcanics aquifer, which also underlies the Napa Pipe sites, could reliably produce at least 3,200 afa on a long-term basis.

Non-potable water needs will be met using recycled water from either the Soscol Water Recycling Facility owned and operated by the Napa Sanitation District (NSD) or a new on-site package wastewater treatment plant. Because the water supply for the non-potable needs is uncertain, it is possible that groundwater may be needed. However, as indicated above, there is more than sufficient groundwater to serve all of the water needs for development on the Napa Pipe sites, and the ultimate source for potable and non-potable water will be further evaluated as part of the project-specific EIR for Napa Pipe. Therefore, impacts related to groundwater on the Napa Pipe sites would be less than significant.

c. Conservation and Safety Element Updates
As part of this project, the Napa County General Plan would be updated in order to identify floodplains that could accommodate floodwater for groundwater recharge and stormwater management. This change to the Gen-

Phil Brun, City of Napa; Hillary Gitelman, Napa County; and Keith Rogal, Napa Redevelopment Partners, LLC. January 18, 2008, page 5.

eral Plan would encourage the County to increase groundwater recharge opportunities and may have a beneficial impact on groundwater recharge.

4. Loss of Groundwater Flow to Surface Waters
   a. Programs and Policies
   Aside from the program to redesignate the Monticello Road Rural Residential area, the programs and policies of the proposed Housing Element do not specify exact locations for new housing units. It can be expected that these future housing units would be scattered throughout the county. Therefore, it is not expected that any housing development under the programs and policies of the Housing Element would have impacts on groundwater flows to surface waters that are substantial enough to adversely affect biological resources.

   In addition, compliance with County Code Section 18.108.027 would ensure that a minimum level of vegetation would be maintained on-site on lands that are in sensitive water supply drainages. These regulations ensure that impervious surfaces will not substantially interfere with groundwater recharge in such areas. In addition, under the Stormwater Regulations (Napa County Code Chapter 16.28), BMPs to reduce impervious surfaces would be required.

   There are also a number of policies and procedures in place that protect biological resources that could be affected by reduced groundwater flows, including the federal and California Endangered Species Acts and the County’s Conservation Regulations. For more information about these regulations, please see Chapters 4.5 and 4.6 of this Draft EIR.

   Because development under the programs and policies of the proposed Housing Element is not expected to substantially affect groundwater flows to surface waters, and due to the policies and procedures in place to address groundwater flow and protect biological resources, impacts would be less than significant.
In addition, individual development projects proposed under three of the programs in the proposed Housing Element – the density bonus for mobile home parks, accessory units on Commercial Limited/Commercial Neighborhood parcels and redesignations in the Monticello Road Rural Residential Area programs – would be subject to discretionary review from the County. Therefore, development projects under these programs would be subject to additional review for compliance with General Plan policies and other regulations, including the Conservation Element of the Napa County General Plan and CEQA.

Several policies in the Napa County General Plan’s Conservation Element would reduce groundwater flow impacts on biological resources from housing developed under these three programs. Policy CON-11 states that the County shall maintain and improve fisheries, including by maintaining and restoring the channel flows and characteristics necessary for fish passage and by undertaking water use conservation strategies to prolong the duration of flows for migrating fish. Policy CON-13 states that the County will require that discretionary projects avoid impacts to fisheries and habitat supporting special-status species. Where such impacts cannot be avoided, projects shall include mitigation measures to maintain sufficient dissolved oxygen in water, sufficient amounts of food and habitat and proper temperature. Lastly, Policy CON-14 states that developers will be responsible for mitigation to offset losses of fisheries and riparian habitat when it is infeasible to avoid impacts.

CEQA also requires environmental review of discretionary housing development projects that would be built under these programs. This environmental review would include a site-specific assessment of groundwater impacts for individual projects. Compliance with the policies of Napa County’s General Plan and the required environmental review process would further ensure that groundwater flow impacts from discretionary projects under proposed programs would be avoided.
b. Housing Sites
The Angwin sites are within the Conn Creek – Upper Reach drainage; the Moskowite Corner sites are within the Moss Creek drainage and Putah Creek watershed; the Spanish Flat sites are within the Lake Berryessa – West drainage and Putah Creek watershed; and the Napa Pipe sites are within the American Canyon basin. An increase in impervious surfaces could reduce the amount of groundwater recharge at any of the proposed housing sites. However, the sites range in size from 3 to 152 acres and are small enough relative to the groundwater basins and the rest of the unincorporated county not to significantly impact groundwater recharge. Furthermore, the areas designated for housing are in four different areas in the county.

As indicated in Section D.3.b.i above, development on the Angwin sites would rely on water supplied by Pacific Union College (PUC), which relies on four wells. As stated above, use of the PUC’s water system for new development has the potential to violate General Plan policy AG/LU-61, which prevents a net increase of groundwater use within the Conn-Creek-Upper Reach Local Drainage. Therefore, development on the Angwin sites could result in a significant groundwater flow impact requiring mitigation.

As indicated in Section D.3.b.ii above, development in Moskowite Corner relies on surface water from the Moskowite Reservoir. However, Sites A and B propose only three and six units, respectively, so it is possible that they could rely on groundwater rather than connect to the existing water system. In addition, it is not certain whether the availability and reliability of the surface water supply from the Moskowite Reservoir will be sufficient to support housing development on all of the Moskowite Corner sites. Therefore, groundwater may be a potential alternative source of water for this development if the surface water supply is not adequate. There is not sufficient data available to determine whether there is adequate groundwater supply to serve development on the Moskowite Corner sites. Therefore, impacts related to groundwater flow may be significant requiring mitigation.
The Spanish Flat sites would rely on surface water, so there would be no loss of groundwater flow from development on these sites. The Napa Pipe sites would use groundwater from the Sonoma Volcanics aquifer, which has the capacity to provide more than 20 times the demand of housing on the Napa Pipe sites, as discussed in Section D.3.b.iv above. Given this excess of capacity, loss of groundwater flow to surface waters from this aquifer would be minimal. Therefore, impacts related to groundwater flow from development on the Spanish Flat and Napa Pipe sites would be less than significant.

5. Increase in Surface Runoff Resulting in Flooding or that Exceeds Stormwater Drainage System Capacity

a. Programs and Policies

The development of new housing units built under the programs and policies of the proposed Housing Element would increase the amount of impervious surfaces, which would increase the rate or amount of runoff. This could lead to flooding on- or off-site. In addition, increased runoff could exceed the capacity of existing stormwater drainage systems and/or potentially require a new facility.

Housing developed under the proposed programs and policies will not be concentrated and will be limited in size. For instance, secondary residential units would not add significantly to the amount of impervious surface on-site, because secondary dwelling units will be limited to a maximum of 1,200 square feet. Therefore, the increase in surface runoff is not expected to be substantial.

Implementation of Napa County Code Chapter 16.28, described in detail in Section A.3, above, would address potential impacts related to surface runoff, flooding and stormwater drainage systems.

♦ County Stormwater Regulations Chapter 16.28, and the corresponding construction site runoff control policy, addresses runoff from the project site during construction activities. Projects that disturb more than 10,000 square feet of soil, move more than 50 cubic yards of soil, disturb soils on slopes 15 percent or greater, or disturb soils within 50 feet of a waterway
or storm drain that leads to a receiving water (Waters of the State) must have a Stormwater Quality Management Plan or a Stormwater Pollution Prevention Plan prepared, depending on the amount of soil disturbance. The Plan would employ the use of BMPs that prevent or reduce erosion and runoff.

County Stormwater Regulations Chapter 16.28, and the corresponding post-construction runoff management policy, addresses runoff from the project site after the construction period is over and through the life of the project. Housing developed under the programs and policies of the proposed Housing Element that includes ten or more units would require the use of Site Design, Source Control and Treatment Control design standards. Housing development that involves the creation or redevelopment of impervious surfaces 10,000 square feet or greater, hillside development on slopes greater than 30 percent, construction or reconstruction of roadways, or installation of new or alteration of existing stormdrains would require Site Design and Source Control design standards. The design standards for these projects include BMPs that prevent or reduce runoff and erosion, and that are a permanent component of the development project.

Development under the programs and policies of the proposed Housing Element is not expected to significantly increase the amount of runoff due to the limited size of new second units and accessory units, and the distribution of units throughout the county. Furthermore, compliance with the applicable regulations and procedures described above would address potential impacts to runoff, flooding and stormwater drainage systems as a result of the proposed programs and policies. Therefore, development under the programs and policies would result in a less-than-significant impact.

In addition, individual development projects proposed under three of the programs in the proposed Housing Element – the density bonus for mobile home parks, accessory units on Commercial Limited/Commercial Neighborhood parcels and redesignations in the Monticello Road Rural Residential Area programs – would be subject to discretionary review from the County.
Therefore, development projects under these programs would be subject to additional review for compliance with General Plan policies and other regulations, including the Conservation Element of the Napa County General Plan and CEQA.

Policy CON-50(c) of the Napa County General Plan Conservation Element requires that discretionary projects implement performance measures to ensure peak runoff in 2-, 10-, 50- and 100-year events is not greater than pre-development conditions. CEQA requires environmental review of discretionary housing development projects that would be built under these programs. This environmental review would include a site-specific assessment of surface runoff impacts for individual projects. Compliance with the policies of Napa County’s General Plan and the required environmental review process would further ensure that runoff, flooding and stormwater drainage system impacts from discretionary projects under proposed programs would be avoided.

b. Housing Sites

Similar to the programs and policies, development associated with the potential housing sites would increase impervious surfaces, which would increase the rate or amount of runoff. This could lead to flooding on- or off-site. As stated in Section D.5.a above, compliance with the Napa County Conservation Regulations and Stormwater Regulations would reduce impacts to less-than-significant levels.

There is not an integrated stormwater drainage system in the Angwin, Moskowite Corner and Spanish Flat sites. Therefore, there would be no impact related to stormwater drainage systems.

Development on the Napa Pipe sites would be designed to maintain overland flows to the Napa River. Stormwater discharges would use existing drainages and outfalls; however stormwater retention and treatment systems would be added to the site. Specifically, a combination of bio-retention, grassy swales, previous hardscapes and other appropriate post-construction BMPs would be used to treat site runoff. Therefore, development on the Napa Pipe sites
would also have a less-than-significant impact on surface runoff, flooding and stormwater drainage systems.

c. Conservation and Safety Element Updates
As part of this project, the General Plan would be updated in order to identify floodplains that could accommodate floodwater for groundwater recharge and stormwater management. This change to the General Plan would support continued enhancement of the County’s stormwater management practices and may have a beneficial impact on surface runoff, flooding and stormwater drainage systems.

6. Placement of Housing within a Mapped 100-Year Flood Hazard Area
a. Programs and Policies
It is anticipated that the housing units built under the proposed Housing Element would be located throughout the county. It is therefore possible that future housing development could be proposed in a 100-year flood hazard area. However, the Napa County Code requires residential structures built within a FEMA-designated Special Flood Hazard Area to be elevated at least one foot above the elevation of the 100-year flood level to protect these structures from flood damage. Napa County and FEMA floodplain management guidelines and regulations allow placement of fill within the floodplain to raise building pads above the 100-year flood level as long as it is not within the floodway or the base flood elevation is not raised greater than 1 foot.

In addition, the County Floodplain Management Ordinance requires permits for all development activities within riparian zones (within the 100-year floodplain). Furthermore, the Code of Federal Regulations for the National Flood Insurance Program ensures that structures located within the designated 100-year floodplain are designed to avoid flooding impacts.

Compliance with these regulations will ensure that this impact would be less than significant.
b. Housing Sites

As shown in Figure 4.11-1, the only housing sites that are located within a 100-year floodplain are Angwin Site A and the Napa Pipe sites. The west end of Angwin Site A slightly overlaps Zone A of the FEMA 100-year flood zone, and the majority of the Napa Pipe sites are located within Zone A. This flood hazard zone designation corresponds to the one-percent annual chance floodplain.

As shown in Figure 4.11-1, only a small portion of Angwin Site A overlaps with the 100-year flood zone, and development can be located so as to avoid the flood zone. Since Napa County Code and FEMA floodplain management guidelines require that flood risks be avoided, development on Angwin Site A would avoid the flood zone, resulting in a less-than-significant impact.

The Napa Pipe sites are nearly level and currently range in elevation from approximately 6 to 9 feet above mean sea level. As a part of the current development plans for this site, which would comply with the Napa County Code, the elevation of the sites would be raised to approximately 12 feet above sea level to be above the flood level, plus an additional 5 feet because of the potential for sea level rise due to climate change. The lowest residential living levels would be approximately 15 feet above sea level. In addition, the County Floodplain Management Ordinance would require a permit for development on the Napa Pipe sites, and the Code of Federal Regulations for the National Flood Insurance Program would require that structures on the Napa Pipe sites be designed to avoid flooding impacts. Furthermore, site-specific evaluation of flooding impacts would occur through the required CEQA review process. Therefore, flooding impacts from development of the Napa Pipe sites would be less than significant.

To evaluate the impacts of the fill placed on the Napa Pipe sites on flows elsewhere, flood modeling was conducted using the HEC-RAS model, with a downstream limit at Bull Island. The modeling results indicated that the pre- and post-construction maximum flow rate conditions at Bull Island differed by less than 100 cubic feet per second (cfs), demonstrating a minimal impact.
Figure 4.11-1

FEMA 100-Year Flood Zone and Housing Sites

Source: County of Napa, 2008; Design Community & Environment, 2008
on downstream flows resulting from the lost floodplain storage on the Napa Pipe sites due to the placement of fill.\textsuperscript{8} Therefore, impacts related to redirecting flood flows on the Napa Pipe sites would be \textit{less than significant}.

The other housing sites are not located within a 100-year flood hazard area, so there would be \textit{no impact}.

c. Conservation and Safety Element Updates
As part of this project, the Safety Element would be updated to identify additional information about flood hazards and adjust goals and policies related to flooding risk. This change to the Safety Element would reduce impacts related to the placement of structures or housing within a flood zone, and any associated impacts related to impeding or redirecting flood flows. Therefore, the update to the Safety Element may have a \textit{beneficial} impact.

7. Exposure of People or Structures to a Significant Risk of Loss, Injury or Death Involving Flooding from Levee or Dam Failure
a. Programs and Policies
It is anticipated that the housing units built under the proposed Housing Element would be located throughout the county. It is therefore possible that new residents and structures could be exposed to risks associated with flooding from levee or dam failure.

However, Napa County restricts development on floodplains through its Floodplain Management Ordinance (Chapter 16.04 of the Napa County Code), which requires permits for all development activities within special flood hazard areas. In addition, the California Building Code (CBC) contains standards to ensure that measures to address flood hazards are incorporated into building designs and building siting. Compliance with these regulations

\textsuperscript{8} Manley, Whitman F., and Amanda R. Berlin. Remy, Thomas, Moose and Manley, LLP, Attorneys at Law. Personal memorandum communication with Hillary Gitelman and Sean Trippi, Napa County, and Steve Noack, DC&E, April 4, 2008.

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would reduce impacts associated with exposure to loss, injury or death as a result of flooding from levee or dam failure to a less-than-significant level.

b. Housing Sites
i. Angwin, Moskowite Corner and Spanish Flat
None of the Angwin, Moskowite Corner or Spanish Flat housing sites are located downstream of a levee or dam\(^9\) and impacts related to loss, injury or death as a result of a failure of a levee or dam are therefore considered to be less than significant.

ii. Napa Pipe
There is moderate to high risk of levee failure in the southern portion of the Napa Valley. This is due to weak foundation materials that are believed to be present in this region, and would especially affect older levees that were not constructed using modern standards. The Napa Pipe sites are located in the inundation areas of the Milliken Dam and Conn Dam. Placing people or structures within these inundation areas could result in risk of loss, injury or death. However, compliance with the CBC, which requires that measures to address flood hazards are incorporated into building designs and building siting, would ensure that impacts would be less than significant.

c. Conservation and Safety Element Updates
As part of this project, the General Plan would be updated to identify additional information about flood hazards, including dam failure inundation maps, and establish additional goals, policies and objectives to protect the community from flooding risk. This change to the General Plan would reduce impacts related to exposure to flood risks resulting from a dam or levee failure. Therefore, the update to the Safety Element may have a beneficial impact.

E. **Cumulative Impacts**

The 2007 Napa County General Plan EIR found one significant and unavoidable impact related to hydrology and water quality in Napa County:

- Continued land uses and development under the proposed General Plan Update would increase demand on groundwater supplies, and the associated increased well pumping could therefore result in the decline of groundwater level and accelerated overdraft.

Implementation of the proposed Housing Element would bring new structures and residents to the county, which would increase demands on groundwater supplies and well pumping where new units rely on groundwater and this groundwater use is not off-set elsewhere. However, housing sites would rely on identified surface or groundwater supplies, housing programs would result in a modest number of units scattered throughout the county, and existing County policies and mitigation measures described in Section F below would ensure that potential impacts are reduced to less-than-significant levels except in those cases where supplemental mitigation is offered below. Therefore, the project would not contribute to this cumulative impact from the 2008 General Plan.

F. **Impacts and Mitigation Measures**

**Impact HYDRO-1:** Within the Milliken-Sarco-Tulucay (MST) groundwater deficient area, new second units, new units accessory to commercial uses, and

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10 In the 2004 EA, a significant impact was found for development on Spanish Flat Site D because it was less than an acre in size, and therefore did not meet the threshold for requiring compliance with the NPDES Phase II Municipal Stormwater General Permit. Since 2004, the County’s Stormwater Ordinance and associated policies have been adopted, which address development projects less than 1 acre in size. Therefore, this EIR does not find the same significant impact and recommend an associated mitigation measure.
new units permitted as a result of re-designation of 60 parcels in the Monticello Road area from RR to UR could exacerbate groundwater problems.

Mitigation Measure HYDRO-1: To avoid exacerbating existing groundwater deficiencies, property owners seeking approval for new second units, accessory units or subdivisions within the MST as a result of Housing Element policies and programs shall be required to demonstrate the availability of municipal water supplies, or to demonstrate that potential groundwater use will be fully offset by reductions in the use of groundwater elsewhere on the affected parcel(s).

Significance After Mitigation: Less than significant.

Impact HYDRO-2: New development on the Angwin sites that relies on the PUC groundwater system conflicts with General Plan Policy AG/LU-61, which prevents a net increase of groundwater use within the Conn-Creek-Upper Reach Local Drainage. In addition, there is insufficient data available to determine whether there is adequate groundwater supply.

Mitigation Measure HYDRO-2: To comply with General Plan Policy AG/LU-61, the County shall require use of groundwater on the Angwin sites to be fully offset elsewhere in the Conn-Creek-Upper Reach Local Drainage by implementing water conservation strategies – such as using low-flow toilets, fixing leaky pipes and using reclaimed water for irrigation purposes – or other strategies to decrease the use of groundwater associated with existing activities in the watershed. Alternatively, the developer may demonstrate that the project would have no impact on the long term sustainability of groundwater supplies by providing monitoring data and technical analyses or by providing evidence of an alternative water source prior to issuance of a building permit.

Significance After Mitigation: Less than significant.
Impact HYDRO-3: Although new development on the Moskowite Corner sites would rely on surface water from the Moskowite Reservoir, it is not certain whether the availability and reliability of the surface water supply from the Moskowite Reservoir will be sufficient to support the proposed housing development. Therefore, groundwater may be needed for this development, and there is insufficient data available to determine whether there is adequate groundwater supply to serve development on the Moskowite Corner sites.

Mitigation Measure HYDRO-3: Prior to approving a building permit for development on the Moskowite Corner sites, the property owner and/or developer shall be required to demonstrate adequate capacity from surface water sources. If there is not adequate long-term supply from surface water sources, groundwater shall be explored as an alternative or emergency source of potable water, as well as the potential to offset groundwater use by using reclaimed water for irrigation purposes in the watershed.

Significance After Mitigation: Less than significant.
This chapter describes the potential effects of the proposed Housing Element on cultural and paleontological resources. Cultural resources include historic building and structures, historic districts, historic sites, prehistoric and historic archaeological sites, and other historical objects and artifacts. Paleontological resources include vertebrate, invertebrate, and plant fossils. All relevant information related to the regulatory framework and existing conditions identified in Chapter 4.12 of the 2007 Napa County General Plan Draft EIR is incorporated by reference and briefly summarized. New and updated information pertaining to cultural and paleontological resource regulations and existing conditions is also included.

A. Regulatory and Policy Framework

Section 4.12.2 of the 2007 Napa County General Plan Draft EIR contains a detailed description of the regulatory framework related to cultural and paleontological resources in the project area that includes State regulations and policies. The regulatory framework discussion focuses on the California Environmental Quality Act (CEQA), which requires that public agencies consider the effects of their actions on historical resources and unique archaeological resources. CEQA Guidelines include definitions of historical and archaeological resources and provide mitigation measures related to impacts on such resources, as well as protocol for situations when human remains are discovered. Additional advice regarding methods to identify and evaluate cultural resources, as well as regarding consultation methods with Native American tribes, is found in the Technical Assistance Series produced by the State Office of Historic Preservation and the Tribal Consultation Guidelines produced by the State Office of Planning and Research. The 2007 Napa County General Plan Draft EIR also discusses Senate Bill 18, which requires that local governments consult with Native American tribes prior to adoption of a general plan amendment.

This section contains updated regulatory information pertaining to Napa County’s General Plan.
1. **Napa County General Plan**

The Community Character Element of the Napa County General Plan contains the following goals and policies regarding cultural and paleontological resources.

**Goal CC-4:** Identify and preserve Napa County’s irreplaceable cultural and historic resources for present and future generations to appreciate and enjoy.

**Policy CC-19:** The County supports the identification and preservation of resources from the County’s historic and prehistoric periods.

**Policy CC-23:** The County supports continued research into and documentation of the county’s history and prehistory, and shall protect significant cultural resources from inadvertent damage during grading, excavation, and construction activities.

**Action Item CC-23.1:** In areas identified in the Baseline Data Report as having a significant potential for containing significant archaeological resources, require completion of an archival study and, if warranted by the archival study, a detailed on-site survey or other work as part of the environmental review process for discretionary projects.

**Action Item CC-23.2:** Impose the following conditions on all discretionary projects in areas which do not have a significant potential for containing archaeological or paleontological resources:

- “The Planning Department shall be notified immediately if any prehistoric, archaeological, or paleontologic artifact is uncovered during construction. All construction must stop and an archaeologist meeting the Secretary of the Interior’s Professional Qualifications Standards in prehistoric or historical archaeology shall be retained to evaluate the finds and recommend appropriate action.”

- “All construction must stop if any human remains are uncovered, and the County Coroner must be notified according to Section 7050.5 of California’s Health and Safety Code. If the remains are determined to be Na-
When discretionary projects involve potential historic architectural resources, the County shall require an evaluation of the eligibility of the potential resources for inclusion in the NRHP [National Register of Historic Places] and the CRHR [California Register of Historic Resources] by a qualified architectural historian. When historic architectural resources that are either listed in or determined eligible for inclusion in the NRHP or the CRHR are proposed for demolition or modification, the County shall require an evaluation of the proposal by a qualified preservation architect to determine whether it complies with the Secretary of the Interior’s Standards for Preservation Projects. In the event that the proposal is determined not to comply with the Secretary of the Interior’s Standards, the preservation architect shall recommend modifications to the project design for consideration by the County and for consideration and possible implementation by the project proponent. These recommendations may include modification of the design, re-use of the structure, or avoidance of the structure.

B. Existing Conditions

Section 4.12.1 of the 2007 Napa County General Plan Draft EIR contains a detailed description of the existing cultural and paleontological resource conditions in Napa County, including conditions pertaining to prehistory, ethnography, history, cultural resources and paleontological resources. Ethnographic records show that the Wappo, Lake Miwok and Patwin tribal groups inhabited the Napa region. Archaeological and paleontological investigations in the county have uncovered shellmounds, manmade artifacts and fossil remains. Historical investigations in Napa County have uncovered prehistoric and historical archaeological sites and significant architectural features. The county also contains several State and federally listed historical resources dating back to the mid-nineteenth century.
Detailed information pertaining to cultural and paleontological resources on the housing sites is included throughout Section D, below.

C. Standards of Significance

A cultural or paleontological resource impact is considered significant if implementation of the Housing Element Update would result in any of the following (based on Public Resources Code Sections 21083.2 and 21084.1, and State CEQA Guidelines Appendix G Section 15064.5):

1. Substantial adverse change in the significance of an archaeological resource or an historical resource, as defined in Public Resources Code Section 21083.2 and State CEQA Guidelines Appendix G Section 15064.5, respectively;

2. Direct or indirect destruction of a unique paleontological resource or site or unique geological feature; or

3. Disturbance of any human remains, including those interred outside of formal cemeteries.

D. Impact Discussion

This section discusses the potential impacts to Napa County’s cultural and paleontological resources as a result of the policies, programs and implementation of the proposed Housing Element. For each standard of significance, impacts are discussed separately in relation to the proposed Housing Element’s programs and housing sites.

1. Adverse Change in Significance of an Archeological or Historical Resource or Destruction of a Unique Paleontological Resource or Geological Feature

a. Programs and Policies

Aside from the program to redesignate the Monticello Road Rural Residential area, it is not known where the housing units constructed under the programs
and policies of the proposed Housing Element would be located. However, new units constructed under programs encouraging second units, farmworker housing, increased density in mobile home parks, and accessory units on CL/CN parcels would most likely be constructed on parcels that are already developed with residential buildings, commercial buildings, or intensive agriculture, where archaeological, historical, unique paleontological or geologic resources would have already been disturbed.

The proposed programs and policies do not designate any areas for housing development on sites known to contain archeological or historical resources. However, due to Napa County’s history of settlement by Native Americans, Europeans and Americans, it is possible that some of the housing units constructed under the proposed programs and policies could be located on lands with archeological or historical resources. If these resources are known and are listed at the local, State or national level, then future housing should be designed to avoid impacts on these resources.

The proposed programs and policies also do not designate any areas for housing development on sites known to contain paleontological resources or unique geological features. However, according to the collections database maintained by the Museum of Paleontology at the University of California, Berkeley, there are eight identified paleontological sites and 52 specimens in Napa County.\(^1\) Therefore, it is possible that unknown paleontological resources or unique geological features may be uncovered during construction.

Because it is possible that unknown archaeological, historical, unique paleontological or geologic resources may be uncovered during construction, disturbance of such resources could occur, resulting in a significant impact requiring mitigation.

b. Housing Sites

None of the housing sites are known to contain unique paleontological resources or geologic features. However, given the known presence of paleontological sites and specimens in Napa County, it is possible that buried resources could be present, and accidental discovery could occur during work on the sites. Disturbance of unknown unique paleontological resources or geologic features would be a significant impact requiring mitigation.

i. Angwin

Angwin Sites A and B contain archaeological resources. Angwin Site A contains an archaeological site with obsidian flakes and probable fire-cracked rock; this site measures roughly 130 meters by 225 meters. Angwin Site B contains an archaeological site (CA-NAP-541) with obsidian waste flakes. The site is located at the south end of Angwin Site B and measures approximately 150 meters by 90 meters. Both Angwin Sites A and B contain prehistoric archaeological sites that have been tentatively classified as lithic scatter. These sites would require additional evaluation prior to development to determine how proposed housing could impact archaeological resources. Because of the presence of these archaeological resources on Angwin Sites A and B, development activities associated with the project could result in significant impacts on cultural resources requiring mitigation.

ii. Moskowite Corner

Moskowite Corner Sites C and D contain archaeological resources, which are located within an archaeological site identified as CA-NAP-235. The site contains obsidian tools and flaking debris, fire-fractured rock, dietary bone and shell, stone milling implements and possible human remains.²

Moskowite Corner Site C also contains a potential historic resource: a concrete block dairy barn with a corrugated roof and a series of ventilators along the roof peak. The structure is said to have been constructed in 1954.

barn has a rectangular floor plan and measures approximately 30 feet by 50 feet. The barn is in good condition and is currently used for storage. Moskowite Corner Site D also contains a historic-period homestead of the late nineteenth or early twentieth century. The complex includes a standing barn and adjacent shed, as well as the collapsed remains of another residence. Because of the presence of these archaeological and historical resources on Moskowite Corner Sites C and D, development activities associated with the project could result in significant impacts on cultural resources requiring mitigation.

iii. Spanish Flat
None of the Spanish Flat sites contain known archaeological or historical resources. However, it is possible that buried archaeological deposits could be present, and accidental discovery could occur during work on the sites. Disturbance of unknown archaeological or historical resources would be a significant impact requiring mitigation.

iv. Napa Pipe
Development of the Napa Pipe sites could potentially cause a substantial adverse change in the significance of a historical resource as defined by CEQA. The Napa Pipe site contains the Basalt Shipyard, which was built shortly after 1938 by the nearby Basalt Rock Company and is considered to be potentially significant. Needing barges to haul quarried stone to the San Francisco Bay area, the company opened their own shipyard to build steel barges, and later was contracted by the U.S. Navy to build ocean-going barges. Basalt eventually built several self-propelled ships for the Navy, primarily mine layers and salvages ships.3

Housing development on the Napa Pipe sites would demolish this potentially significant historical industrial complex. Demolition of a historical resource is considered an adverse change to the significance of a resource; therefore this is considered a significant impact requiring mitigation.

2. Disturbance of Human Remains
   a. Programs and Policies
   Aside from the program to redesignate the Monticello Road Rural Residential area, it is not known where the housing units constructed under the programs and policies of the proposed Housing Element will be located. However, new units constructed under programs encouraging second units, farmworker housing, increased density in mobile home parks, and accessory units on CL/CN parcels would most likely be constructed on parcels that are already developed with residential buildings, commercial buildings, or intensive agriculture, where human remains would have already been disturbed.

   The proposed programs and policies do not designate any areas for concentrated housing development on sites known to contain human remains. However, due to Napa County’s history of settlement by Native Americans, Europeans and Americans, it is possible that some of the housing units constructed under the proposed programs and policies could be located on lands with human remains. If these resources are known, then future housing should be designed to avoid impacts to them. It is still possible that unknown human remains may be uncovered during construction, in which case future housing constructed under the proposed programs and policies would need to be evaluated for human remains as required by the environmental review process. Disturbance of unknown human remains would be a significant impact requiring mitigation.

   b. Housing Sites
   Moskowite Corner Sites C and D are the only housing sites that are likely to contain human remains. These sites contain an archaeological site identified as CA-NAP-235. Soule and Sheeders’ 1982 documentation of the site describes site CA-NAP-235 as possibly containing human remains. Future housing on Moskowite Corner Sites C and D should be designed to avoid

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impacts to these remains. It is possible that additional unknown human remains may be uncovered during construction on these and the other housing sites. Disturbance of human remains on any of the sites would be a significant impact requiring mitigation.

### E. Cumulative Impacts

The 2007 Napa County General Plan EIR found one significant and unavoidable impact related to cultural and paleontological resources in Napa County:

- Projected development under the proposed Napa County General Plan Update could result in the substantial alteration or demolition of significant historic architectural resources (e.g. buildings, structures, and/or stone walls).

The 2007 General Plan Draft EIR found impacts to historic resources to be significant and unavoidable. A mitigation measure was identified and implemented, resulting in the inclusion of Policy CC-26.5 in the final version of the 2008 General Plan, which ensures identification of significant historic resources prior to housing development, thereby providing an opportunity to take appropriate action to protect significant resources. However, it could not be determined if all historic resources could be feasibly avoided or fully mitigated, so the impact remained significant and unavoidable.

Housing constructed on Moskowite Corner Sites C and D and Napa Pipe Sites A and B could contribute to this significant and unavoidable impact because these sites contain known historic architectural resources, and development could impact these resources. Mitigation Measure CUL-4 in Section F below would prohibit demolition of the resources on the Moskowite Corner sites if they are found to be eligible for inclusion on the California Register of Historical Resources. However, the Basalt Shipyard on the Napa Pipe sites could not be preserved if the sites are developed, so Mitigation Measure CUL-5 in Section F below only requires that if the resource is found to be eligible for inclusion on the California Register, it must be documented to the
Historic American Buildings Survey standards. Because development on the site could result in the demolition of a significant historic architectural resource, it would contribute to the cumulative significant impact from the General Plan.

F. Impacts and Mitigation Measures

Impact CUL-1: Buried archaeological or paleontological resources could be present on any of the potential housing sites or lands to be developed under the proposed programs, and accidental discovery could occur during work on the sites. Disturbance of unknown archaeological or paleontological resources would be a significant impact.

Mitigation Measure CUL-1: Development under all of the programs and policies of the Housing Element and on all of the housing sites shall comply with Action Item CC-23.2 in the Community Character Element of the Napa County General Plan. Action Item CC-23.2 requires that the Planning Department be notified if any prehistoric, archaeological or paleontological artifact is uncovered during construction. In such an event, construction must cease and an archaeologist must be consulted to evaluate the findings and recommend actions to be taken.

Significance After Mitigation: Less than significant.

Impact CUL-2: Angwin Sites A and B contain prehistoric archaeological resources that have been tentatively classified as lithic scatter. Direct impacts to the resources could result from development activities including grading, excavation, and trenching. Indirect impacts could occur from collection of artifacts by development/construction personnel and increased pedestrian traffic.

Mitigation Measure CUL-2: Prior to issuance of a building permit, Angwin Sites A and B shall undergo further archaeological investigations to determine whether the cultural resources on these sites qualify as sparse.
lithic scatters (as defined by the State Historic Preservation Officer), or whether the resources are more significant archaeological sites. If the sites are found to consist solely of sparse lithic scatters, then they shall be treated as such following SHPO treatment plans and development may occur after proper treatment has been completed. If the sites are found to be more significant archaeological sites, then no development shall occur within the limits of the sites and the limits of the sites shall be fenced and excluded from development and construction activities.

**Significance After Mitigation:** *Less than significant.*

**Impact CUL-3:** Moskowite Corner Sites C and D contain prehistoric archaeological sites. Direct impacts could result from development activities including grading, excavation, and trenching. Indirect impacts could occur from collection of artifacts by development/construction personnel and increased pedestrian traffic.

**Mitigation Measure CUL-3:** No development shall occur within the limits of the known archaeological sites on Moskowite Corner Sites C and D. The limits of the archaeological site shall be fenced and excluded from development and construction activities. Construction, parking, equipment and materials storage, and all other development activities shall be restricted from the archaeological site. Development and construction personnel shall be restricted from the archaeological site.

**Significance After Mitigation:** *Less than significant.*

**Impact CUL-4:** Moskowite Corner Sites C and D contain buildings that could be significant cultural resources. Altering or demolishing these buildings would be a significant impact.

**Mitigation Measure CUL-4:** The existing buildings on Moskowite Corner Sites C and D shall be left intact, unless a survey of these buildings conducted following protocol established by the State Office of Historic
Preservation determines that they are not eligible for inclusion on the California Register of Historical Resources.

**Significance After Mitigation:** *Less than significant.*

**Impact CUL-5:** The construction of housing on the Napa Pipe sites would result in the demolition of the Basalt Shipyard, a significant historic architectural resource, which would contribute to a cumulatively significant impact from the General Plan. With Mitigation Measure CUL-5, this impact would be reduced, but not avoided, and would remain *significant and unavoidable*.

Mitigation Measure CUL-5: The Basalt Shipyard shall be evaluated for potential inclusion on the California Register, and if found eligible shall be photo-documented to the Historic American Buildings Survey (HABS) standards. Removal of this significant architectural resource would remain *significant and unavoidable*.

**Significance After Mitigation:** *Significant and unavoidable.*

**Impact CUL-6:** Buried human remains could be present on any of the potential housing sites or lands to be developed under the proposed programs, and accidental discovery could occur during work on the sites. Disturbance of unknown human remains would be a significant impact.

Mitigation Measure CUL-6: Development under all of the programs and policies of the Housing Element and on all of the housing sites shall comply with Action Item CC-23.2 in the Community Character Element of the Napa County General Plan. Action Item CC-23.2 requires that construction must cease if human remains are found, and the County Coroner must be notified to determine if the remains are Native American, in which case CEQA procedures outlined in Section 15064.5 (d) and (e) shall must be followed.

**Significance After Mitigation:** *Less than significant.*
This chapter describes the potential effects of the proposed Housing Element on public services and utilities. All relevant information related to the regulatory framework and existing conditions identified in Chapter 4.13 of the 2007 Napa County General Plan Draft EIR is incorporated by reference and briefly summarized. New and updated information pertaining to public services and utilities regulations and existing conditions is also included.

This chapter is organized by sections according to the following service types:

A. Fire Protection and Emergency Medical Response
B. Law Enforcement
C. Water Supply
D. Sewer Service
E. Solid Waste
F. Schools
G. Electricity and Natural Gas
H. Social Services
I. Parks and Recreation

For each service type, there are sub-sections associated with regulatory framework, existing conditions, standards of significance, impact discussions and impacts and mitigation measures.

A. Fire Protection and Emergency Medical Response

1. Regulatory and Policy Framework
Section 4.13.1.2 of the 2007 Napa County General Plan Draft EIR contains a detailed description of the regulatory framework related to fire protection and emergency medical response in Napa County that includes State and local regulations and policies.

Several State agencies, regulations and programs pertain to fire protection and emergency medical response. The California Occupational Safety and Health Administration establishes minimum standards for fire suppression and emer-
gency medical services. The State Emergency Management System (SEMS) program sets measures by which jurisdictions should handle emergency disasters. Non-compliance with SEMS measures can result in the State withholding disaster relief funding from a jurisdiction in the event of an emergency disaster. The California Department of Forestry and Fire Protection (CALFIRE) manages and protects the State’s natural resources through ongoing assessment and an extensive Resource Management Program, which is implemented in Napa County.

There are also several State wildfire hazard reduction measures and regulations. The California Public Resources Code requires the designation of “State responsibility areas,” over which the State takes responsibility for preventing and suppressing wildland fires. The California Public Resources Code also includes defensible space requirements, which require that a fire break be provided around structures in areas that may be subject to wildfires. Another wildfire hazard reduction measure is the Vegetation Management Program, which is a fire reduction program administered by CALFIRE. Lastly, the California Fire Plan is intended to reduce the overall costs and losses from wildfire in California. The California Fire Plan is developed by the California Board of Forestry and CALFIRE.

The local programs and policies pertaining to fire protection and emergency medical response include the Napa County General Plan, the Napa County Fire Department Strategic Plan, the Napa Operational Area Hazard Mitigation Plan (OAHMP) and the Napa County Code. The Napa County General Plan contains goals and policies to address fire protection and emergency medical response, as described further in Section A.1.a.i below. The Napa County Fire Department Strategic Plan identifies goals and objectives for the Napa County Fire Department to enhance its quality of service and reduce risks for county residents. The OAHMP identifies potential hazards in the county and their likelihood to occur, as well as mitigation measures to address these risks. Section 15.32.010 of the Napa County Code adopts the Fire Code that the County will use to establish standards related to fire safety. The Napa County Code also includes additional fire ordinances and regulations.
This section contains updated regulatory and policy information regarding the Napa County General Plan and the California Fire Code.

a. Napa County General Plan
The Safety Element of the Napa County General Plan contains the following goals and policies related to fire protection and emergency medical response.

Policy SAF-7.5: Increasing the supply of workforce housing will increase the likelihood that Napa County’s first responders will live locally and be immediately available in the event of a disaster or other emergency.

Goal SAF-3: It is the goal of Napa County to effectively manage forests and watersheds, and to protect homes and businesses from fire and wildfire and minimize potential losses of life and property.

Policy SAF-14: The County will prepare a fire management plan and will continue, enhance, and implement programs seeking to reduce losses and costs associated with catastrophic fires.

Policy SAF-15: The County shall coordinate with CAL FIRE and fire agencies in neighboring counties to plan for future fire prevention and suppression needs.

Policy SAF-37: The County will seek to coordinate with state and federal agencies for use of land and facilities to reduce risks and avoid unreimbursed costs related to emergency preparedness and response.

Policy SAF-38: The County will continue to implement the Napa Operational Area Hazard Mitigation Plan (NOAHMP), which is incorporated here by reference, in the planning and operations of the County to achieve the goals, objectives, and actions of the NOAHMP, including:

♦ Promoting a flood safer community.
♦ Promoting an earthquake safer community.
4.13-4

♦ Promoting a fire safer community.
♦ Promoting a technological and biological safer community.
♦ Reducing impacts from flooding.
♦ Reducing impacts of earthquakes.
♦ Minimizing the risk of wildfire at the urban interface.
♦ Improving the County’s ability to mitigate technological hazards and agricultural threats.

b. Napa County Code

Section 4.9.2 of the 2007 Napa County General Plan Draft EIR contains information regarding the 2000 Uniform Fire Code, which was the fire code adopted by the State of California and Napa County. However, on January 1, 2008, the State of California adopted the 2006 International Fire Code as the model code for the 2007 California Fire Code.1 Napa County has adopted the 2007 California Fire Code, which is stated in County Code Chapter 15.32.010.2

On October 28, 2008 the Napa County Board of Supervisors adopted the map developed by CAL FIRE delineating local responsibility area very high severity zones in Napa County. By County Ordinance No. 1309, new construction in these zones must implement ignition resistant construction building standards and all properties in these zones must maintain defensible space.

2. Existing Conditions

Section 4.13.1.1 of the 2007 Napa County General Plan Draft EIR contains a detailed description of the existing fire protection and emergency medical response conditions in the project area. Section 4.13.1.1 describes existing fire protection conditions pertaining to service standards, as well as funding and emergency medical response conditions pertaining to service area, facilities and staffing, existing demand and service standards. Fire protection in the


2 County of Napa, Napa County Code, 15.32.010.
county is primarily provided by the CAL FIRE and the Napa County Fire Department (NCFD), which provide services to nearly 30,000 residents in 728 square miles of unincorporated Napa County. The American Canyon Fire Protection District provides services to 83 parcels in unincorporated Napa County. The Napa County Office of Emergency Services (OES) works with State agencies, County departments and various community groups to handle major disasters. The four emergency response service providers in the county are the Angwin Community Ambulance, the Piner’s Ambulance, REACH and the California Highway Patrol Air Operation Unit. NCFD and emergency medical response service providers are funded through property taxes and contracts with municipalities.

This section does not contain any new or updated information pertaining to existing conditions.

3. Standards of Significance
A fire protection or emergency medical response impact is considered significant if implementation of the Housing Element Update would result in the following (based on State CEQA Guidelines Appendix G):

a. Substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services.

Please note that CEQA does not require an assessment of fiscal impacts associated with providing services.

4. Impact Discussion
This section discusses the potential impacts regarding fire protection and emergency services as a result of the policies, programs and implementation of the proposed Housing Element Update. For each standard of significance, impacts are discussed separately in relation to the Housing Element’s programs and housing sites.
a. **Adverse Physical Impacts Associated with the Provision of Governmental Facilities**

Fire and emergency medical response is not currently regulated by service standards adopted by Napa County; however, the Napa County Fire Department recommends the level of service nationally recognized by the National Fire Protection Agency (NFPA).³ In general, the County strives to maintain an eight-minute response time.⁴

i. **Programs and Policies**

The proposed Housing Element Update includes goals, objectives, policies and programs to assist the County in assessing housing needs, providing housing directly, and facilitating the construction of needed units. Through the implementation of programs, the County proposes to accommodate up to 153 units by 2014. These programs include second unit production and second units on parcels zoned Agricultural Preserve, farm worker housing production, density bonus for mobile home parks with Planned Development zoning, accessory units on parcels zoned Commercial Limited (CL) or Commercial Neighborhood (CN) and redesignations in the Monticello Road Rural Residential area.

Although there would be an increase in demand for emergency services provided by CAL FIRE and the Napa County Fire Department, 153 additional residences would be within the capacity of the existing fire protection facilities.⁵ Additional fire protection and/or emergency medical requests would be distributed over multiple fire stations, thus reducing impacts. Therefore, implementation of the programs and policies of Housing Element Update would result in _less-than-significant_ impacts from the provision of fire protection or emergency medical facilities.

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³ Gabrielle Avina, Napa County Fire Marshal, Personal Communication, October 14, 2008.

⁴ Gabrielle Avina, Napa County Fire Marshal, Personal Communication, October 29, 2008.

⁵ Gabrielle Avina, Napa County Fire Marshal, Personal Communication, October 14, 2008.

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ii. Housing Sites

a) Angwin

Initial fire and medical response to the Angwin sites is from the Angwin Volunteer Fire Department. The Angwin Volunteer Fire Department is well staffed with volunteers and a fire engine. As a result of the Housing Element Update, the Angwin community could potentially increase by 191 new residences at the Angwin site, as shown in Table 3-1 (in Chapter 3, Project Description). Although the density of development in the Angwin area might typically trigger the need for additional staffing and resources, the Angwin Volunteer Fire Department is one of the most active volunteer departments in the county and typically responds with a large number of volunteer firefighters in a fairly short amount of time. Current fire department staffing levels and fire department response is adequate to serve an increase of 191 residences, and no new facilities would need to be constructed. Therefore, the impact resulting from increased provision of fire protection and emergency medical response for 191 residences at the Angwin sites would be less than significant.

b) Moskowite Corner

Initial response to the Moskowite Corner sites is from the Capell Volunteer Fire Department, with additional response from paid, staffed fire stations at Spanish Flat and Monticello Road in Napa. Current fire department staffing levels and resources are adequate to serve the proposed level of new development in this area, although the department would require that buildings be constructed with fire-safe building materials. Therefore, the impact resulting from increased provision of fire protection and emergency medical response for 105 residences at the Moskowite Corner sites would be less than significant.

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7 Gabrielle Avina, Napa County Fire Marshal, Personal Communication, October 29, 2008.
c) Spanish Flat

Initial response to the Spanish Flat sites is from a paid fire station at Spanish Flat, with additional response from the Capell and Pope Valley volunteer fire departments. Current fire department staffing levels and resources are adequate to serve the proposed level of new development in this area, although the department would require that buildings be constructed with fire-safe building materials. Therefore, the impact resulting from increased provision of fire protection and emergency medical response for 99 residences at the Spanish Flat sites would be less than significant.

Napa Pipe

There is currently no fire station within an eight minute response time area of the Napa Pipe sites. A potential increase of 850 new residences allowed at Napa Pipe resulting from the Housing Element Update would likely necessitate a new fire station to respond to service calls generated at the site.

The construction of a new fire station would likely result in short-term and temporary noise and air quality impacts. Other adverse impacts would be dependent on the characteristics of the fire station site, but could include impacts to water quality, erosion and biological resources. Specific impacts would be identified through the legally-required environmental review process. Until that environmental review process is completed, it is assumed that development of housing on the Napa Pipe sites could potentially result in a significant impact related to the construction and operation of new fire protection facilities. (See mitigation provided.)

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8 Gabrielle Avina, Napa County Fire Marshal, Personal Communication, October 29, 2008.
9 Gabrielle Avina, Napa County Fire Marshal, Personal Communication, October 14, 2008
10 Napa County Fire Department, Fire Station Deployment Analysis and Master Plan Implementation, Draft Report, page 44. This report is in draft form and the conclusions presented within the document are not final.
Development on the Napa Pipe sites could also result in increases in mutual aid calls to the City of Napa, which would necessitate the negotiation of a mutual aid agreement. However, the City would be unlikely to require a new facility as a result.

5. Cumulative Impacts
The 2007 Napa County General Plan EIR did not find any significant and unavoidable impacts related to fire protection and emergency services in Napa County. Full buildout of the Napa Pipe site will likely generate 600 to 700 additional emergency and fire calls annually, requiring a new station for a four-person engine company to service Napa Pipe. As described in Section A.4.a.ii.d above, a new fire station would also be required to serve the portion of the Napa Pipe site that would be developed under the proposed Housing Element Update. Mitigation Measure PUB-1 in Section A.6 below would mitigate the impacts of a new fire station to serve the Napa Pipe site to a less-than-significant level. Therefore, this project would not contribute to any significant and unavoidable cumulative fire protection and emergency service impacts.

6. Impacts and Mitigation Measures
Impact PUB-1: Development of the Napa Pipe sites would likely necessitate a new fire station to respond to service calls generated at the site. Construction and operation of new fire protection facilities would likely result in environmental impacts.

Mitigation Measure PUB-1: The County shall require the Napa Pipe developer to provide a new fire station on the site. New fire protection facilities must be sited appropriately to minimize potential environmental impacts associated with the construction and operation of the facility. In addition, fire protection facilities adequate to serve residents on the Napa Pipe sites must be in place prior to occupancy of proposed housing.

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Significance after Mitigation: Less than significant.

B. Law Enforcement

1. Regulatory and Policy Framework
Section 4.13.2.2 of the 2007 Napa County General Plan Draft EIR contains a detailed description of the regulatory framework related to law enforcement in Napa County, including local regulations and policies.

The local programs and policies pertaining to law enforcement include the Napa County General Plan and emergency response/evacuation plans under the State Emergency Management System (SEMS). The Napa County General Plan contains goals and policies to address law enforcement services, as described further in Section B.1.a below. The SEMS program sets measures by which jurisdictions should handle emergency disasters. Non-compliance with SEMS measures can result in the State withholding disaster relief funding from a jurisdiction in the event of an emergency disaster.

This section contains updated policy information pertaining to Napa County’s General Plan.

a. Napa County General Plan
The Safety Element of the Napa County General Plan contains the following policy related to law enforcement.

Policy SAF-34: All new commercial and multi-family development shall be referred to the Sheriff’s Department for review of public safety issues. If the proposed project is adjacent to or within an incorporated city/town, consultation with their law enforcement agency shall also be required.

2. Existing Conditions
Section 4.13.2.1 of the 2007 Napa County General Plan Draft EIR contains a detailed description of the existing law enforcement conditions in Napa
County that includes a discussion of the Napa County Sheriff’s Department (NCSD) as well as local police departments. For these service providers, the 2007 Napa County General Plan Draft EIR describes existing conditions pertaining to service area, facilities, existing demand, funding and mutual aid agreements and service standards. The NCSD provides law enforcement services to the unincorporated parts of the county and to the incorporated cities of American Canyon and Yountville through contractual arrangements. The NCSD has mutual aid agreements with the Napa City Police Department, Vallejo City Police Department and the California Highway Patrol. The NCSD has four department stations throughout the county. The NCSD is funded through the County’s General Fund and uses a staffing standard of 0.7 officers per 1,000 residents.

This section does not contain any new or updated information pertaining to existing conditions.

3. Standards of Significance
A law enforcement impact is considered significant if implementation of the Housing Element Update would result in the following (based on State CEQA Guidelines Appendix G):

a. Substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services.

Please note that CEQA does not require an assessment of fiscal impacts associated with providing services.

4. Impact Discussion
This section discusses the potential impacts related to law enforcement services resulting from the policies, programs, and implementation of the proposed Housing Element Update. For each standard of significance, impacts
are discussed separately in relation to the Housing Element’s programs and housing sites.

a. Adverse Physical Impacts Associated with the Provision of Governmental Facilities

i. Programs and Policies

Implementation of the Draft Housing Element Programs and Policies would result in a population increase of 389 new residents distributed throughout unincorporated Napa County. Based on the standard of 0.7 officers per 1,000 residents, these new residents would not require an additional law enforcement officer or associated equipment. Furthermore, additional calls associated with these units would occur over multiple Sheriff’s beats, thus reducing impacts. Therefore, the implementation of the proposed Housing Element Update programs and policies would result in less-than-significant impacts from the provision of law enforcement facilities.

ii. Housing Sites

The County Sheriff’s Department anticipates that proposed development on the housing sites would require an increase in staff members. The demand for service generated by the 485 potential new residents at the Angwin sites would be served by Beat 4 and according to the Sheriff may require one new sergeant and four new deputies, as well as possibly a new police station. If constructed, a new police station in the Howell Mountain area has the potential to create environmental impacts. During construction, there could be short-term and temporary noise and air quality impacts. Other adverse impacts would be dependent on the characteristics of the facility site, but could include water quality, erosion and biological resources. Specific impacts would be identified through the legally-required environmental review process. Until that environmental review process is completed, it is assumed that, the construction and operation of new law enforcement facilities could potentially result in a significant impact requiring mitigation.

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13 John Robertson, Napa County Sheriff’s Office, Personal Communication, October 29, 2008.
The 267 potential residents at the Moskowite Corner sites and the 251 potential new residents at the Spanish Flat sites would be served by Beat 5. Although new staff would be required, they would be served by the existing modular Sheriff’s office, so additional facilities would not be required.\footnote{John Robertson, Napa County Sheriff’s Office, Personal Communication, December 18, 2008.}

The 2,159 potential residents at the Napa Pipe site would be served by Beat 2.\footnote{John Robertson, Napa County Sheriff’s Office, Personal Communication, October 29, 2008.} It is anticipated that one sergeant and three deputies would be required to serve the residents of the development of the Napa Pipe sites under the proposed Housing Element, but new facilities would not be required.\footnote{John Robertson, Napa County Sheriff’s Office, Personal Communication, December 18, 2008.} Development on the Napa Pipe sites could also result in increases in mutual aid calls to the City of Napa, which could necessitate the re-negotiation of a mutual aid agreement.

Since development on the remaining sites would not require new facilities, impacts would be less than significant.

5. Cumulative Impacts
The 2007 Napa County General Plan EIR did not find any significant and unavoidable impacts related to law enforcement services in Napa County. Full buildout of the Napa Pipe site will likely generate the need for seven new officers and a new substation on-site.\footnote{Economics Research Associates, \textit{Napa Pipe Fiscal Impact Analysis, Service Plan and Infrastructure Financing Plan}, Administrative Draft Report, October 21, 2008, page 12.}

The construction of a Sheriff’s substation would likely result in short-term and temporary noise and air quality impacts. Other adverse impacts would
be dependent on the characteristics of the substation site, but could include impacts to water quality, erosion and biological resources. Therefore, it is possible that the new substation required to serve full buildout of Napa Pipe would result in a significant impact and thus the proposed project would contribute to this significant cumulative impact requiring mitigation.

6. Impacts and Mitigation Measures

Impact PUB-2: Development of the Angwin sites could necessitate a new sheriff station to respond to service calls generated at the site. Construction of new law enforcement facilities would potentially result in environmental impacts.

Mitigation Measure PUB-2: The County shall require that any new law enforcement facility in the Angwin area must be sited appropriately to minimize potential environmental impacts associated with the construction and operation of the facility.

Significance after Mitigation: Less than significant.

Impact PUB-3: The proposed Housing Element Update would contribute to a significant cumulative impact associated with the need for a new sheriff substation to serve the full buildout of the Napa Pipe site.

Mitigation Measure PUB-3: The County shall require that a new substation at Napa Pipe be sited to minimize potential environmental impacts, possibly in conjunction with a new fire station. In addition, development of a new sheriff substation at Napa Pipe will be required to comply with Napa County General Plan Policy SAF-34, which requires consultation with the Sheriff’s Department and the City of Napa Police Department.

Significance after Mitigation: Less than significant.
C. Water Supply

1. Regulatory and Policy Framework

Section 4.13.3.2 of the 2007 Napa County General Plan Draft EIR contains a detailed description of the regulatory framework related to water supply in Napa County, which includes State and local regulations and policies.

Senate Bill (SB) 610 and Assembly Bill (AB) 901, Water Supply Planning, amend the Public Resources and Water Codes as they pertain to the following: consultation with water supply agencies; urban water management plan contents and State funding restrictions for agencies who do not prepare such plans; and water supply assessment contents and circumstances requiring them. SB 221 establishes consultation and analysis requirements related to water supply planning for residential subdivisions including more than 500 dwelling units. SB 221 is not typically applied to policy documents, such as the Housing Element, but to specific development proposals.

The Napa County Flood and Water Conservation District (NCFCWCD) plays a major role in the local water regulatory framework. Through an agreement with the California Department of Water Resources (DWR), the District is provided with an annual entitlement of water from the State Water Project, which it subcontracts to local agencies. The District also has an agreement with the United States Bureau of Reclamation for an annual entitlement of water drawn from Lake Berryessa (the Solano Project), which it subcontracts to individual property owners and special districts in the area. There are also a number of Napa County Code provisions related to water supply, including the following: public and individual water supply systems regulations; County enforcement provisions for the proper operation and maintenance of public water systems; well design, construction and operation regulations; and regulations for the extraction, use and preservation of groundwater. In addition, there are specific guidelines identifying when a groundwater permit is required in the Milliken-Sarco-Tulocay basin, which is a groundwater deficient area.
This section contains updated policy information pertaining to Napa County’s General Plan.

a. Napa County General Plan

The Conservation Element of the Napa County General Plan contains the following goals and policies pertaining to water supply.

**Goal CON-10:** Conserve, enhance and manage water resources on a sustainable basis to attempt to ensure that sufficient amounts of water will be available for the uses allowed by this General Plan, for the natural environment, and for future generations.

**Goal CON-13:** Promote the development of additional water resources to improve water supply reliability and sustainability in Napa County, including imported water supplies and recycled water projects.

**Policy CON-51:** Recognizing that groundwater best supports agricultural and rural uses, the County discourages urbanization requiring net increases in groundwater use and discourages incorporated jurisdictions from using groundwater except in emergencies or as part of conjunctive-use programs that do not cause or exacerbate conditions of overdraft or otherwise adversely affect the County’s groundwater resources.

**Policy CON-53:** The County shall ensure that the intensity and timing of new development are consistent with the capacity of water supplies and protect groundwater and other water supplies by requiring all applicants for discretionary projects to demonstrate the availability of an adequate water supply prior to approval. Depending on the site location and the specific circumstances, adequate demonstration of availability may include evidence or calculation of groundwater availability via an appropriate hydrogeologic analysis or may be satisfied by compliance with County Code “fair-share” provisions or applicable State law. In some areas, evidence may be provided through coordination with applicable municipalities and public and private water purveyors to verify water supply sufficiency.
Policy CON-55: The County shall consider existing water uses during the review of new water uses associated with discretionary projects, and where hydrogeologic studies have shown that the new water uses will cause significant adverse well interference or substantial reductions in groundwater discharge to surface waters that would alter critical flows to sustain riparian habitat and fisheries or exacerbate conditions of overdraft, the County shall curtail those new or expanded water uses.

2. Existing Conditions
Section 4.13.3.1 of the 2007 Napa County General Plan Draft EIR contains a detailed description of the existing water supply conditions in Napa County. Section 4.13.3.1 provides water supply information for the City of American Canyon, City of Napa, Town of Yountville, City of St. Helena, City of Calistoga, Circle Oaks County Water District, Congress Valley Water District, Lake Berryessa Resort Improvement District, Napa Berryessa Resort Improvement District and Spanish Flat Water District. For each of these jurisdictions, the 2007 Napa County General Plan EIR addresses existing conditions pertaining to water supply, water demand, and water treatment, distribution and storage facilities.

In general, the cities rely on surface water while the unincorporated areas rely on groundwater, although some unincorporated areas, like Angwin, do utilize surface water. In a normal year, the total water demand in the unincorporated portion of the Napa Valley can be met by current supplies; however, shortages would occur during both multiple- and single-dry year conditions.

Recently, multiple recent dry years and federal decisions regarding the protection of fish species in the San Francisco Bay and Delta have led to new limits on water transfers, accompanied by an increased awareness of long-term water supply concerns in Napa County and throughout California.
3. Standards of Significance

A water supply impact is considered significant if implementation of the Housing Element Update would result in either of the following (based on State CEQA Guidelines Appendix G):

a. Substantial depletion of groundwater supplies or substantial interference with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level. Depletion of groundwater would be considered substantial if it results in a net increase in groundwater usage in the Milliken-Sarco-Tulocay groundwater basin or result in groundwater extraction that would exceed the amount of groundwater in storage over the long term (normal, dry and multiple dry years). (Note that this standard was addressed in Section D.3 of Chapter 4.11, Hydrology and Water Quality.)

b. Need for new water supplies or entitlements, or need for new or expanded local or regional water treatment or distribution facilities that would result in a physical impact to the environment.

4. Impact Discussion

This section discusses the potential impacts on water supply as a result of the policies, programs and implementation of the proposed Housing Element Update. For each standard of significance, impacts are discussed separately in relation to the Housing Element’s programs and housing sites.

a. Depletion of Groundwater Supplies or Interference with Groundwater Recharge

As noted above, this standard was addressed in Section D.3 of Chapter 4.11, Hydrology and Water Quality. Please refer to that section for a discussion of this standard.

b. Need for New Water Supplies, Entitlements or Facilities

i. Programs and Policies

Most new housing units would be served by groundwater because groundwater serves most of the unincorporated county. However, some of these new housing units could utilize surface water if they are constructed within certain
water districts. It is possible that pipelines may need to be expanded, which could result in construction-related environmental impacts. Because the proposed programs and policies would not generate a significant number of housing units and the majority of these units would rely on groundwater, water supply impacts would be minimal. Furthermore, because new housing units are expected to be located throughout the county, no one area or surface water source would be significantly impacted.

Development of housing under the program to redesignate the Monticello Road Rural Residential area to Urban Residential would require an expansion of the City of Napa’s municipal water distribution facilities to serve this area. This is because in order to qualify for rezoning and subdivision, the applicant would be required to demonstrate that municipal water service would be available to serve the new housing units. It is anticipated that the expansion of the water distribution facilities could involve laying new pipeline to extend existing facilities and/or add connections. Since the existing trunk lines are already in place under Monticello Road, and since this area is already substantially developed and disturbed, the expansion of the existing facilities would be expected to have minimal environmental impacts. Table 4.13-1 summarizes the types of environmental impacts that could occur from the expansion of water facilities unless they are carefully planned and executed.

While the magnitude of the impacts described in Table 4.13-1 would vary depending on the specific site and project involved, the expansion of water distribution facilities is generally addressed by federal, State and local regulations, and new or expanded facilities would undergo environmental review under CEQA. Therefore, for the purposes of this programmatic EIR, it is assumed that water distribution facility expansion projects would comply with such regulations, resulting in a less-than-significant impact.

**ii. Housing Sites**

*a) Angwin*

As discussed in Section D.3.b.i of Chapter 4.11, Hydrology and Water Quality, water for new housing in Angwin would come from wells owned by the
# Table 4.13-1

<table>
<thead>
<tr>
<th>Types of Potentially Affected Resources</th>
<th>Possible Impacts Unless New or Expanded Facilities are Carefully Planned and Executed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Surface Water Hydrology</td>
<td>Changes in the magnitude and timing of flows in affected streams; changes in the level of affected reservoirs and lakes.</td>
</tr>
<tr>
<td>Geology and Soils</td>
<td>Increase in erosion and sedimentation from construction activities; change in sediment transport in streams; geologic hazards could cause problems for new facilities and their operators if they are not sited carefully.</td>
</tr>
<tr>
<td>Water Quality</td>
<td>Changes in stream and reservoir/lake temperature, dissolved oxygen, turbidity, total suspended solids, and other water quality parameters of concern during construction and operation of new facilities.</td>
</tr>
<tr>
<td>Fishery Resources including Special-status Species</td>
<td>Change in the amount and quality of fishery habitat in affected streams and reservoirs/lakes, ad potential fish entrainment at possible diversion sites in lakes and streams.</td>
</tr>
<tr>
<td>Wetlands and Riparian Habitat</td>
<td>Changes in the amount or functions and values of various types of wetlands from the construction of new facilities, or in riparian areas from changes in the operation of reservoir/lakes and changes in streamflows. Riparian habitat could be affected by hydrology changes or new construction and is especially important habitat for wildlife and botanical species.</td>
</tr>
<tr>
<td>Botanical Resources including Special-status Species</td>
<td>Disturbance to rare plants and their habitat and other types of vegetation from construction activities or changes in hydrology along streams and at reservoirs and lakes.</td>
</tr>
<tr>
<td>Wildlife Resources including Special-status Species</td>
<td>Changes in the amount and quality of affected wildlife habitat near affected reservoir/lakes, and streams and where appurtenant facilities would be located.</td>
</tr>
<tr>
<td>Recreation</td>
<td>Changes in the quantity or quality of recreation opportunities, including fishing, boating, hiking, and whitewater rafting affected reservoirs/lakes and in affected streams; some impacts could also occur during construction and operation of new conveyance, treatment, storage, and pumping facilities.</td>
</tr>
</tbody>
</table>
### Table 4.13-1  
**Potential Environmental Impacts from New Water Supply Projects, Water Rights Transfers and Related Infrastructure (continued)**

<table>
<thead>
<tr>
<th>Types of Potentially Affected Resources</th>
<th>Possible Impacts Unless New or Expanded Facilities are Carefully Planned and Executed</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Visual Resources</strong></td>
<td>Changes in reservoir/lake levels, and streamflows and the addition of new project facilities could affect the visual environment. New pipelines, pumping stations, or transmission lines near or in residential areas or highly visited areas would cause negative impacts.</td>
</tr>
<tr>
<td><strong>Agriculture</strong></td>
<td>Some irrigated land or grazing land could be taken out of production where project conveyance facilities need to be located and to accommodate growth. The availability of surface water supplies for agricultural uses could increase.</td>
</tr>
<tr>
<td><strong>Cultural Resources</strong></td>
<td>Historic, prehistoric, and ethnographic resources could be affected by hydrology changes or the construction and maintenance of new facilities.</td>
</tr>
<tr>
<td><strong>Compatibility with Existing Land Uses and Other Policies and Plans</strong></td>
<td>Some new project facilities may not be compatible with surrounding land uses, or may be inconsistent with related federal, state, tribal, and local plans and policies (including those of the U.S. Forest Service, USFWS, and California Department of Fish and Game).</td>
</tr>
<tr>
<td><strong>Mineral Resources</strong></td>
<td>New project facilities could interfere with the extraction of minerals at known or yet-to-be discovered mineral sites.</td>
</tr>
<tr>
<td><strong>Public Utilities</strong></td>
<td>The routing and sitting of new project facilities could interfere with the operation or maintenance of existing or planned public utilities, including communication and energy infrastructure.</td>
</tr>
<tr>
<td><strong>Socioeconomic Resources</strong></td>
<td>Customers of the water purveyors and other would enjoy the socioeconomic benefits associated with a more reliable water supply and related economic growth. Water rates would likely increase to help pay for new facilities. Facility construction would cause short-term and beneficial employment and income impacts. Energy or mineral impacts would also cause related socioeconomic effects.</td>
</tr>
<tr>
<td><strong>Air Quality and Noise</strong></td>
<td>Air emissions from construction equipment and traffic and loud noises could occur during the construction phase of new projects. New pumping stations would likely cause adverse noise impacts for nearby residents and recreationists.</td>
</tr>
<tr>
<td><strong>Transportation</strong></td>
<td>Local roads would experience traffic increases during construction.</td>
</tr>
<tr>
<td><strong>Public Health and Safety</strong></td>
<td>Construction activities could create some safety hazards.</td>
</tr>
</tbody>
</table>
Table 4.13-1  
**POTENTIAL ENVIRONMENTAL IMPACTS FROM NEW WATER SUPPLY PROJECTS, WATER RIGHTS TRANSFERS AND RELATED INFRASTRUCTURE (CONTINUED)**

<table>
<thead>
<tr>
<th>Types of Potentially Affected Resources</th>
<th>Possible Impacts Unless New or Expanded Facilities are Carefully Planned and Executed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Growth-Inducing Effects</td>
<td>New system infrastructure and water supply projects would likely cause growth-inducing impacts.</td>
</tr>
</tbody>
</table>


PUC, and would be within the available capacity of PUC’s water treatment and delivery system. Any new water facilities resulting from Mitigation Measure HYDRO-2 would be regulated by pertinent federal, State and local regulations, and would undergo further environmental review under CEQA unless it qualified for an exemption under State law. For the purposes of this programmatic EIR, it is assumed that water facility projects would comply with such regulations, resulting in a *less-than-significant* impact.

**b) Moskowite Corner**

The Moskowite Corner housing sites could generate 105 new dwelling units, with 267 residents. Using a water demand factor of 150 gallons per person per day, this development could generate 45 acre-feet annually (afa) of water demand. The Capell Valley Water District (CVWD) would administer water services for the Moskowite Corner sites. The CVWD, which relies on surface water from the Moskowite Reservoir, has recently built a new water treatment plant to serve its district. It is likely that the treatment plant could accommodate new development, but a detailed assessment would be required to confirm capacity.\(^{18}\)

Because the existing water supply may not have adequate capacity to serve development on the Moskowite Corner sites, new water supplies may be needed, which could have environmental impacts, as summarized in Table

\(^{18}\) Bruce Burton, District Engineer, State Department of Health Services Drinking Water Program, personal communication, August 11, 2008.
4.13-1. Any new water facilities would be regulated by pertinent federal, State and local regulations, and would undergo environmental review under CEQA as required by law. For the purposes of this programmatic EIR, it is assumed that water facility projects would comply with such regulations, resulting in a less-than-significant impact.

c) Spanish Flat

The Spanish Flat housing sites could generate 99 new dwelling units with 251 residents. Using a water demand factor of 150 gallons per person per day, this development could generate 42 afu of water demand. Most of the Spanish Flat sites are served by the Spanish Flat Water District (SFWD), with the exception of Spanish Flat Site F, which lies just outside of the SFWD’s boundaries. The SFWD, which relies on surface water from Lake Berryessa, has recently built two new water treatment plants to serve its district; however, all existing and new plants are currently serving at capacity and cannot accommodate additional development.19 Because the existing water supply may not have adequate capacity to serve development on the Spanish Flat sites, new water supplies may be needed, which could have environmental impacts, as summarized in Table 4.13-1. Any new water facilities would be regulated by pertinent federal, State and local regulations, and would undergo environmental review under CEQA as required by law. For the purposes of this programmatic EIR, it is assumed that water facility projects would comply with such regulations, resulting in a less-than-significant impact.

d) Napa Pipe

As discussed in Section D.3.b.iv of Chapter 4.11, Hydrology and Water Quality, the Napa Pipe sites will rely on groundwater for potable needs and recycled surface water for non-potable needs.20 Although there is adequate groundwater supply, new wells, treatment and distribution facilities will be

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19 Steve Silva, SFWD, personal communication, August 11, 2008.
needed, as will distribution facilities for non-potable recycled water. Such new facilities could have environmental impacts, as summarized in Table 4.13-1. However, any new water facilities would be regulated by pertinent federal, State and local regulations, and would undergo environmental review under CEQA as required by law. For the purposes of this programmatic EIR, it is assumed that water facility projects would comply with such regulations, resulting in a less-than-significant impact. (Also see the discussion of groundwater use in the Section 4.11, Hydrology and Water Quality.)

5. Cumulative Impacts
The 2007 Napa County General Plan EIR found one significant and unavoidable impact related to water supply in Napa County:

- Land uses and development under the proposed General Plan Update would increase the demand for additional sources of potable and irrigation water as well as additional or expanded treatment and distribution facilities to meet projected demands at year 2030 and at year 2050.

As discussed in Section C.4, the Angwin, Moskowite Corner and Spanish Flat sites may not have adequate water supply to serve new development, and the Monticello Road Rural Residential Area program and Napa Pipe sites may require the development or expansion of water distribution and treatment facilities. However, such new or expanded facilities would be subject to local, State and federal regulations, and would require project-specific CEQA review. Therefore, impacts related to the new facilities would be reduced to a less-than-significant level, and the proposed Housing Element Update's contribution to this significant and unavoidable impact from the General Plan would also be less than significant.
6. Impacts and Mitigation Measures\textsuperscript{21}

All potential impacts related to water supply from the proposed Housing Element Update are less than significant. Therefore, there are no mitigation measures.

D. Sewer Service

1. Regulatory and Policy Framework

Section 4.13.4.2 of the 2007 Napa County General Plan Draft EIR contains a detailed description of the regulatory framework related to sewer service in Napa County that includes federal and local regulations and policies.

The federal regulation pertaining to wastewater is the Clean Water Act (CWA), which regulates the water quality of discharges into the “waters of the United States.” The “waters of the United States” include wetlands and perennial and intermittent stream channels. Under the Section 404 of the CWA, the US Army Corps of Engineers is authorized to set standards and issue permits relating to such discharges.

The local regulations and programs pertaining to wastewater include the Napa County Sanitation District and Napa County Code Title 13 (Title 13). The Napa County Sanitation District provides wastewater collection, treatment and disposal services in the City of Napa and surrounding unincorporated areas of Napa County. Napa County Code Title 13, “Water, Sewers and Public Services,” regulates sewage systems in unincorporated areas of

\textsuperscript{21} Mitigation Measure UTIL-6 from the 2004 Housing Element EA prohibits housing construction at Spanish Flat until adequate water service is available. This mitigation measure is intended to address a threshold regarding insufficient surface water supply, which is not specifically addressed in this Draft EIR. This Draft EIR assesses the potential environmental impacts of new facilities and expanded water supplies, rather than the lack of water supply itself. Therefore, this mitigation measure is not included in the Draft EIR.
Napa County. Title 13 addresses connection requirements, permits and application fees, system location and design and operation requirements.

This section contains updated policy information pertaining to Napa County’s General Plan.

a. Napa County General Plan
The Conservation Element of the Napa County General Plan contains the following policy related to wastewater.

**Policy CON-62:** As stated in Policy AG/LU-74, the County supports the extension of recycled water to the Coombsville area to reduce reliance on groundwater in the MST groundwater basin and exploration of other alternatives. Also, the County shall identify and support ways to utilize recycled water for irrigation and non-potable uses to offset dependency on groundwater and surface waters and ensure adequate wastewater treatment capacity through the following measures:

a. Require (as part of continued implementation of County Code Title 13 Division 2 provisions associated with sewer systems) verification of adequate wastewater service for all development projects prior to their approvals. This requirement includes coordination with wastewater service purveyors to verify adequate capacity and infrastructure either exists or will be available prior to operation of the development project.

b. Use wastewater treatment and reuse facilities where feasible to reclaim, reuse, and deliver treated wastewater for irrigation and possible potable use depending on wastewater treatment standards.

c. Require proposals for non-residential construction in the Airport Industrial Area and lower Milliken-Sarco/Tulucay Creeks Area to incorporate dual plumbing to allow for the use of non-potable/recycled water when such water becomes available.

d. Encourage the use of non-potable/recycled water wherever recycled water is available and require the use of recycled water for golf courses where feasible.
2. Existing Conditions

Section 4.13.4.1 of the 2007 Napa County General Plan Draft EIR contains a detailed description of existing sewer service conditions in Napa County. There are seven wastewater service providers in Napa County, including the Napa Sanitation District, Lake Berryessa Resort Improvement District, Napa Berryessa Resort Improvement District, Napa River Reclamation District, Spanish Flat Water District, Circle Oaks County Water District and American Canyon Public Works District. For each of these sewer service providers, the 2007 Napa County General Plan EIR addresses existing conditions pertaining to service area, facilities, capacity, existing demand and planned improvements.

This section does not contain any new or updated information pertaining to existing conditions.

3. Standards of Significance

A sewer service impact is considered significant if implementation of the Housing Element Update would result in any of the following (based on State CEQA Guidelines Appendix G):

a. Inadequate capacity to serve the project’s projected demand in addition to the provider’s existing commitments, as found by the wastewater treatment provider serving the project.

b. Violation of wastewater treatment requirements of the applicable Regional Water Quality Control Board.

c. Construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.

4. Impact Discussion

This section discusses the potential impacts regarding sewer service as a result of the policies, programs and implementation of the proposed Housing Element Update. For each standard of significance, impacts are discussed separately in relation to the Housing Element’s programs and housing sites.
a. Inadequate Capacity or Violation of Regional Water Quality Control Board Requirements

ii. Programs and Policies

Aside from the program to redesignate the Monticello Road Rural Residential area, the programs and policies of the proposed Housing Element do not specify exact locations for new housing units. It is assumed that these future housing units will be scattered throughout the county, and that some will require sewer service. The capacity of various sewer service providers is provided in Table 4.13-2. With few exceptions, all of the public water systems in the county have capacity to provide service to the 153 housing units that would potentially be built under the Housing Element Update. The only sewer service provider with a current demand that exceeds capacity is the Circle Oaks County Water District (COCWD) wastewater treatment plant. If housing units resulting from the proposed Housing Element Update were located within the boundaries of the COCWD, and the COCWD was unable to serve them, this would constitute a significant impact.

However, this impact would be avoided through compliance with the Napa County Code. Napa County Code Title 13 regulates individual, public and private sewage systems. New development projects constructed as a result of policies and programs contained in the proposed Housing Element Update that would not be served by an existing wastewater disposal system would be required by the existing permitting system to operate and maintain wastewater disposal facilities without causing pollution or contamination of adjacent lands, surface waters or usable subsurface waters (Ord. 13.56.020). The process regulated by Title 13 would ensure that the impacts related to inadequate wastewater capacity would be less than significant. In addition, to comply with Title 13, public and private sewage systems would not be able to take on new customers if the system or district is in violation of its permit with RWQCB. The process regulated by Title 13 would ensure that the impacts related to violations of Regional Water Quality Control Board requirements would also be less than significant.
## Table 4.13-2 Sewer Service Providers

<table>
<thead>
<tr>
<th>Provider</th>
<th>Service Area</th>
<th>Facilities</th>
<th>Capacity</th>
<th>Existing Demand</th>
<th>Planned Improvements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Napa Sanitation District (NSD)</td>
<td>13 non-contiguous areas consisting of 12,448 acres. The majority of the City of Napa as well as unincorporated portions of southern Napa County. Provides sewer service to over 33,000 connections.</td>
<td>Six pump stations, 267 miles of pipeline, 250 miles of sewer laterals, and one wastewater treatment plant (WWTP) located at 15 Soscol Ferry Road.</td>
<td>The WWTP has a permitted average dry weather capacity of 15.4 mgd which it has never reached.</td>
<td>Demand for sewer service is approx. 6.8 mgd during dry weather flow and approx. 14 mgd during wet weather flow.</td>
<td>With $103 Million allocated in the 5-year budget, plans to expand water reclamation program, improve reclaimed water storage facilities, make improvements to, and/or replace pump stations, and improve, rehabilitate and expand sewer pipelines.</td>
</tr>
<tr>
<td>Lake Berryessa Resort Improvement District</td>
<td>A contiguous, unincorporated area consisting of 2,030 acres. Provides sewer service to 150-160 homes.</td>
<td>WWTP Seven sewer treatment ponds (total capacity of 35 acre-feet). One storage tank Lift stations.</td>
<td>WWTP design capacity of 0.85 mgd. 91,000 gallons (storage tank).</td>
<td>Average dry weather flow of 0.20 mgd; average wet weather flow is unknown.</td>
<td>Gain a permit to install an irrigation field and sewer infrastructure improvements.</td>
</tr>
<tr>
<td>Napa Berryessa Resort Improvement District</td>
<td>A contiguous, unincorporated area consisting of 1,899 acres including the Steele Park Resort. Serves 270-280 homes.</td>
<td>WWTP and one pond employs a spray field.</td>
<td>WWTP design capacity of 0.176 mgd. The pond's capacity is 1.6 mgd.</td>
<td>Average dry weather flow of 0.066 mgd; average wet weather flow is unknown.</td>
<td>Replace and/or rehabilitate monitoring wells and sewer infrastructure.</td>
</tr>
<tr>
<td>Napa River Reclamation District #2109 (NRRD)</td>
<td>Provides sewer service for an estimated district population of 350 people and to 138 sewer connections. Jurisdiction includes the western side of Edgerly Island near San Pablo Bay and an annexed section of property north of Edgerly Island area called the Ingersoll tract which includes about 30 homes.</td>
<td>NRRD WWTP Three large evaporation ponds Three flood control pumps. Owns approx. 15 septic tanks (8x10x14) that collect raw sewage from all 138 connections. Effluent is pumped out of the septic tanks to the “mound filtration system.”</td>
<td>The WWTP has a capacity of 0.040 mgd.10 Mound filtration system has an effluent capacity of 1.040 mgd.</td>
<td>2003 demand for sewer service was approx. 0.016 mgd during dry weather flow and 0.020 mgd during wet weather flow.</td>
<td>Currently there are no planned improvements, however, there has been some discussion to replace parts on the WWTP within the next few years.</td>
</tr>
</tbody>
</table>

Capacity exceeds demand. Permitted average dry weather capacity of 15.4 mgd and a demand of approx. 14 mgd during wet weather flow. NSD WWTP has adequate capacity for future growth and is set up to accommodate more components.
### TABLE 4.13-2  SEWER SERVICE PROVIDERS (CONTINUED)

<table>
<thead>
<tr>
<th>Provider</th>
<th>Service Area</th>
<th>Facilities</th>
<th>Capacity</th>
<th>Existing Demand</th>
<th>Planned Improvements</th>
<th>Capacity Compared to Existing Demand</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spanish Flat Water District</td>
<td>Four non-contiguous, unincorporated areas consisting of 1,178 acres including the Spanish Flat resort. 165 sewer line connections.</td>
<td>Berryessa Pines WWTP: consists of an aeration system that conveys sewage collected from the 99-lot subdivision to two adjacent ponds using percolation and evaporation. 42 of the lots within the subdivision gravity feed directly to the sewer plant. An ejector system is used to convey sewage from the remaining 57 lots. Spanish Flat WWTP.</td>
<td>Spanish Flat WWTP: average dry weather flow: 22,150 gallons per day; peak dry weather flow: 46,515 gallons per day. Average wet weather flow: 23,479 gallons per day; peak wet weather flow: 47,697 gallons per day.</td>
<td>Berryessa Pines WWTP: 0.053 mgd (design capacity).</td>
<td>None.</td>
<td>Capacity exceeds demand. Spanish Flat WWTP: 0.053 mgd (design capacity) and a peak wet weather flow of 47,697 gallons per day.</td>
</tr>
<tr>
<td>Circle Oaks County Water District</td>
<td>Four non-contiguous, unincorporated areas consisting of approx. 252 acres and 189 sewer lines.</td>
<td>Three sewage treatment ponds and associated pumps.</td>
<td>The high avg. flow dry weather month is September, with a daily avg. of 48,553 gallons. The high avg. flow wet weather month is February, with a daily avg. of 133,718 gallons.</td>
<td>None.</td>
<td>None.</td>
<td>Demand exceeds capacity. Capacity of the pond system is 72,000 gpd and the high avg. wet weather flow is 133,718 gallons per day.</td>
</tr>
<tr>
<td>American Canyon Public Works Department</td>
<td>Two incorporated noncontiguous areas consisting of 2,672 acres. Service area is defined as Soscol Creek to the north, Solano County to the east and south, and the Napa River to the west.</td>
<td>American Canyon WWTP: Treatment capacity has been designed to meet projected demand of 2.5 mgd during dry weather flow and 5.0 mgd during peak wet weather flow.</td>
<td>1.14 mgd during dry weather flow and 1.32 mgd during peak wet weather flow.</td>
<td>Looking to implement cyclical valve operations which would help reduce energy usage by 25%. Make improvements to the lift stations which would also help to conserve energy.</td>
<td>Capacity exceeds demand. Treatment capacity designed to meet 2.5 mgd during dry weather flow and 5.0 mgd during peak wet weather flow, while existing dry weather flow and wet weather flow are 1.14 mgd and 1.32 mgd, respectively.</td>
<td></td>
</tr>
</tbody>
</table>

ii.  Housing Sites
   a)  Angwin

The Angwin sites would be served by Pacific Union College (PUC), which maintains its own sewer system and wastewater treatment facility. The existing treatment facility has the capacity to handle 200,000 gallons of wastewater per day, and the current average dry weather flow is 183,164 gpd, leaving an available capacity of 16,836 gpd.²² According to the generation rate of 265 gpd per unit used by PUC, the proposed 191 units on Sites A and B would generate an additional 50,615 gpd of wastewater, which would exceed the existing capacity of the PUC sewer system.

The College is currently planning plant renovations that would increase the plant’s capacity by an additional 200 homes,²³ which would accommodate the additional development proposed on the Angwin sites. However, this plant renovation is not yet permitted, and is not anticipated to be completed within the next five years.²⁴ Therefore, impacts related to inadequate wastewater capacity would be significant requiring mitigation.

The PUC wastewater system is regulated by the San Francisco Bay Regional Water Quality Control Board.²⁵ Because the system is currently operating within its permitted cap, and because it is not expected that housing units constructed at the Angwin sites would result in a violation of the RWQCB requirements, impacts pertaining to violations of RWQCB regulations would also be less than significant.

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b) Moskowite Corner

There is no wastewater utility in the Moskowite Corner area. Instead, existing development is served with septic systems. There are no regulations that would prohibit development of 105 units on septic, but they must adequately manage the wastewater from a technical standpoint. A package plant or pre-treatment would likely be required indicating a significant impact requiring mitigation.26

Septic systems in eastern Napa County that serve 100 units or more are regulated by the Central Valley Regional Water Quality Control Board (CVRWQCB) under the Porter-Cologne Water Quality Control Act. The CVRWQCB must review and approve all development proposals that include septic systems to ensure that all components of the system meet detailed criteria in areas such as distance to groundwater, percolation rate, soil depth, ground slope, and minimum disposal area.27 For projects less than 100 units in size, Napa County would regulate septic systems. As described in Section D.4.a.i above, Napa County Code Title 13 would require a permit to ensure that wastewater disposal facilities operate without causing pollution or contamination of adjacent lands, surface waters or usable subsurface.

In addition, the CVRWQCB review and approval process and the Napa County Code Title 13 requirements described above would ensure that the impacts of the development at the Moskowite Corner sites pertaining to violations of RWQCB regulations would be less than significant.

c) Spanish Flat

The Spanish Flat sites are served by the Spanish Flat Water District (SFWD). The design capacity of the SFWD treatment plant is 53,000 gpd. On an average dry weather day, flow to the plant is approximately 22,150 gallons, and 23,479 gallons on an average wet weather day. The flow has reached 47,697 gallons.

26 Steve Lederer, Director of Environmental Management, Napa County, personal communication with Nancy Johnson, Napa County, December 18, 2008.

gpd during peak wet weather conditions.\textsuperscript{28} The SFWD treatment plant would not have enough capacity to accommodate the additional 105 additional units on the Spanish Flat sites allowed by the proposed Housing Element Update. Using a generation rate of 300 gpd per unit,\textsuperscript{29} the proposed 99 units would generate an additional 29,700 gpd of wastewater. The SFWD has inadequate capacity and would be unable to serve the units proposed by the Housing Element Update. Therefore, the impact related to wastewater capacity for the Spanish Flat sites would be significant requiring mitigation.

The SFWD wastewater treatment plant is permitted by the CVRWQCB. The district is currently operating within its permitted capacity and there are no pending enforcement orders against the district. The State has ordered the District to implement a groundwater monitoring program, and the District has complied with this order. Results from the program have shown that water quality in the Spanish Flat area meets acceptable standards.\textsuperscript{30} It is not expected that housing units constructed at the Spanish Flat sites would result in a violation of the RWQCB requirements. Therefore, the impacts pertaining to violations of RWQCB requirements would be less than significant.

d) Napa Pipe
The Napa Pipe Sites are served by the Napa Sanitation District (NSD), although the historic use has been industrial, with pre-treatment prior to disposal. The NSD is permitted an average dry weather capacity of 15.4 mgd and receives, during peak wet weather flow, an average of 14 mgd.\textsuperscript{31} The NSD wastewater treatment plant would have enough capacity to serve the potential 850 units proposed in the Napa Pipe sites. Using a generation rate


\textsuperscript{30} Steve Silva, Operator, Spanish Flat Water District, personal communication, December 18, 2008.

of 300 gpd per unit, the proposed 850 units would generate an additional 255,000 gpd of wastewater. The NSD would be able to serve the units proposed by the Housing Element Update within its remaining 1.5 mgd capacity and therefore the impact related to wastewater capacity for the Napa Pipe sites would be less than significant.

The Napa Pipe sites would be served by the NSD. The NSD wastewater treatment plant is permitted to discharge wastewater by the CVRWQCB. Currently, the NSD is in good standing with the State WQCB, and there are no current or tentative orders pending against the District.\(^{32}\) The NSD is scheduled to reapply for its permit with the CVRWQCB in 2010, and at that point, the NSD in cooperation with the RWQCB will decide if and how NSD’s permit should be amended. Until that time, it is expected that there will be no violations of the RWQCB requirements and therefore, impacts would be less than significant.

b. Construction or Expansion of Wastewater Facilities

i. Programs and Policies

Aside from the program to redesignate the Monticello Road Rural Residential area, the programs and policies of the proposed Housing Element do not specify exact locations for new housing units. It is assumed that these future housing units will be scattered throughout the county and that some will require sewer service. The capacity of various sewer service providers is shown in Table 4.13.4-1 of the 2007 Napa County General Plan EIR. With few exceptions, all of the public wastewater systems in the county have capacity to provide service to the 153 housing units that would potentially be built under the Housing Element Update. The only sewer service provider with a current demand that exceeds capacity is the Circle Oaks County Water District (COCWD) wastewater treatment plant. If housing units resulting from the proposed Housing Element Update were located within the boundaries of the COCWD, and the COCWD was unable to serve them, this would constitute

a significant impact. However, this impact would be avoided through compliance with the Napa County Code, as described below.

Development under the program to redesignate the Monticello Road Rural Residential area to Urban Residential would require an expansion of the Napa Sanitation District’s wastewater distribution facilities to serve this area. This is because in order to qualify for Planned Development (PD) zoning, the applicant would be required to demonstrate that municipal wastewater service would be available to serve the new housing units. It is anticipated that the expansion of sewer service would involve laying new pipeline to extend existing facilities and/or add connections. Although existing trunk lines are already in place under Monticello Road, sewer lines have limited capacity to support new growth, so expanded facilities would be needed.

The extension and improvement of wastewater facilities has the potential to result in environmental impacts during construction and ongoing operations. Such impacts, which are similar to those summarized in Table 4.13-1, could include air quality and noise impacts, biological resource impacts, habitat and aquatic resource impacts, geologic and hydrologic impacts, hazards and growth inducement. However, the expansion and improvement of wastewater distribution facilities would be regulated by pertinent federal, State and local regulations, and would undergo environmental review under CEQA. For the purposes of this programmatic EIR, it is assumed that wastewater distribution facility expansion projects would comply with such regulations.

Napa County Code Title 13 regulates individual, public and private sewage systems. New development projects constructed as a result of policies and programs contained in the proposed Housing Element Update that would not be served by an existing wastewater disposal system would be required by the existing permitting system to operate and maintain wastewater disposal facilities without causing pollution or contamination of adjacent lands, surface waters or usable subsurface waters (Ord. 13.56.020). Any sewer service facilities constructed or expanded as a result of the proposed programs and policies would be also regulated by pertinent federal, State and local regulations, and
would undergo environmental review under CEQA. For the purposes of this programmatic EIR, it is assumed that sewer facility expansion projects would comply with such regulations. The existing federal, State and local regulations would ensure that the impacts to related to the need for construction or expansion of wastewater capacity would be less than significant.

ii. Housing Sites
   a) Angwin
   As described in Section D.4.a.ii above, the proposed development on the Angwin sites would exceed the existing capacity of the PUC sewer system. However, the College is currently planning plant renovations that would increase the plant’s capacity by an additional 200 homes, which would accommodate the additional development proposed on the Angwin sites. However, this plant renovation is not yet permitted, and is not anticipated to be completed within the next five years. Therefore, an expansion of the existing wastewater treatment plant and associated facilities would be necessary to serve this development. Such expansion projects would likely result in short-term and temporary noise and air quality impacts. Other adverse impacts would be dependent on the characteristics of the facility site, but could include impacts to water quality, erosion and biological resources. The construction of such facilities would be regulated by pertinent federal, State and local regulations, and would undergo environmental review under CEQA. For the purposes of this programmatic EIR, it is assumed that new wastewater facilities would comply with such regulations and required CEQA mitigations, resulting in a less-than-significant impact.

   b) Moskowite Corner
   The current septic system in the Moskowite Corner community is operational and under compliance as a result of the area’s low density housing. As described in Section D.4.a.ii.b above, septic systems that serve 100 units or more are regulated by the CVRWQCB. The CVRWQCB must review and approve all development proposals that include septic systems to ensure that

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all components of the system meet detailed criteria in areas such as distance to groundwater, percolation rate, soil depth, ground slope, and minimum disposal area. For projects less than 100 units in size, Napa County would regulate septic systems through Napa County Code Title 13. The CVRWQCB and Title 13 regulations would ensure that impacts related to the construction or expansion of wastewater facilities would be less than significant.

c) Spanish Flat
As described in Section D.4.a.ii.c above, the SFWD is currently unable to accommodate the potential units at the Spanish Flat housing sites. To accommodate the additional units, the expansion of an existing wastewater treatment plant and associated facilities would be necessary. Such expansion projects would likely result in short-term and temporary noise and air quality impacts. Other adverse impacts would be dependent on the characteristics of the facility site, but could include water quality, erosion and biological resources. The construction of such facilities would be regulated by pertinent federal, State and local regulations, and would undergo environmental review under CEQA. For the purposes of this programmatic EIR, it is assumed that new wastewater facilities would comply with such regulations and required CEQA mitigations, resulting in a less-than-significant impact.

d) Napa Pipe
The NSD is currently able to accommodate the potential units at the Napa Pipe housing site in the proposed Housing Element Update. No new construction or expansion of existing wastewater treatment plants and associated facilities would be necessary. Therefore, the impacts would be considered less than significant.

5. Cumulative Impacts
The 2007 Napa County General Plan EIR did not find any significant and unavoidable impacts related to sewer service in Napa County. The Napa Pipe sites currently receive sewer service from the NSD. It is currently unknown whether the NSD will serve the Napa Pipe sites at full buildout. In the event that the NSD does not serve the Napa Pipe sites at full buildout, the
developer would construct on-site wastewater treatment facilities that would be maintained and administered by a private Mutual Utilities Company.\textsuperscript{34} Construction and operation of a wastewater treatment plan would likely result in short-term and temporary noise and air quality impacts. Other adverse impacts would be dependent on the characteristics of the facility site, but could include impacts to water quality, erosion and biological resources. However, the construction of such facilities would be regulated by pertinent federal, State and local regulations, and would undergo environmental review under CEQA. For the purposes of this programmatic EIR, it is assumed that new wastewater facilities would comply with such regulations and required CEQA mitigations, resulting in a less-than-significant impact. Therefore, development on the Napa Pipe housing sites under the proposed Housing Element would not contribute to a significant cumulative impact.

6. Impacts and Mitigation Measures

Impact PUB-4: PUC and SFWD have inadequate wastewater capacity to serve new units at Angwin and Spanish Flat proposed by the Housing Element Update. Development at Moskowite Corner would likely require a package plant or pretreatment.

Mitigation Measure PUB-4: No housing shall be built on the Angwin, Moskowite Corner or Spanish Flat sites until adequate wastewater services are available.

Significance After Mitigation: Less than significant.

E. Solid Waste

1. Regulatory and Policy Framework
Section 4.13.5.2 of the 2007 Napa County General Plan Draft EIR contains a detailed description of the regulatory framework related to solid waste service in Napa County that includes federal and State regulations and policies.

The federal regulation pertaining to solid waste is the Resource Conservation and Recovery Act (RCRA). RCRA was enacted in 1976 and governs the management of solid and hazardous waste and underground storage tanks.

The relevant State regulations include the California Integrated Waste Management Act (AB 939) and the California Integrated Waste Management Board Ordinance. AB 939 requires that every City and County in California prepare a Source Reduction and Recycling Element in its Solid Waste Management Plan. The Source Reduction and Recycling Element is required to identify how the jurisdiction will meet the State-mandated waste goal of diverting 50 percent of waste from 2000 onward. The California Integrated Waste Management Board Ordinance is a part of the California Solid Waste Re-Use and Recycling Access Act of 1991, which was passed subsequent to AB 939. Under the California Solid Waste Re-Use and Recycling Access Act, the California Integrated Waste Management Board must draft a “model ordinance” relating to adequate areas for collecting and loading recyclable materials in development projects.

This section contains updated information about the regulatory and policy setting pertaining to Napa County’s General Plan.

a. Napa County General Plan
The Conservation Element of the Napa County General Plan contains the following goal and policies related to solid waste.

**Goal CON-18:** Provide sufficient long-term solid waste disposal capacity for the County consistent with California Integrated Waste Management Act (Public Resources Code section 40000, et seq.) requirements.
Policy CON-87: The County shall promote solid waste source reduction, reuse, recycling, composting and environmentally-safe transformation of waste. The County shall seek to comply with the requirements of AB 939 with regard to meeting state-mandated targets for reductions in the amount of solid waste generated in Napa County.

Policy CON-91: Encourage the maximum protection of all environmental values at solid waste disposal sites by the adoption of standards of planning, design, construction, operation, and maintenance, including:

a. Location away from residential areas.
b. Screening from view.
c. Good road access, not through residential areas.
d. No inhabited areas downwind from the site because dust and odor problems can occur in even the most carefully conducted operations.
e. Location to prevent flooding and pollution and contamination of surface and ground water.
f. Haul distance standards.

2. Existing Conditions
Section 4.13.5.1 of the 2007 Napa County General Plan Draft EIR contains a detailed description of existing solid waste service conditions in Napa County. There are five solid waste providers in Napa County, including: the Upper Valley Disposal Service, the Berryessa Garbage Service, Napa Recycling and Waste Services, Napa County Recycling and Waste Services and American Canyon Recycling and Disposal. In addition, there are two joint powers agencies in Napa County, the Upper Valley Waste Management Agency and the Napa Vallejo Waste Management Authority. The 2007 Napa County General Plan Draft EIR describes operations and facilities for these service providers. The County is currently meeting the source reduction requirements of AB 939.

This section does not contain any new or updated information pertaining to existing conditions.
3. **Standards of Significance**

A solid waste impact is considered significant if implementation of the Housing Element Update would result in either of the following (based on State CEQA Guidelines Appendix G):

a. Production of quantities of solid waste that would exceed the capacity of the landfill(s) that will serve the project’s solid waste disposal needs.

b. Non-compliance with federal, state and local statutes and regulations related to solid waste.

4. **Impact Discussion**

This section discusses the potential impacts regarding solid waste service as a result of the policies, programs and implementation of the proposed Housing Element Update. For the first standard of significance, impacts are discussed separately in relation to the Housing Element’s programs and housing sites. The second standard discusses the housing programs and sites together because the nature of the impacts are similar.

a. **Production of Solid Waste that Exceeds Landfill Capacity**

   i. **Programs and Policies**

   The five solid waste providers in Napa County collect solid waste from the transfer stations in the County and dispose of it at the Keller Canyon, Clover Flat and Potrero Hill landfills. The capacity of the Keller Canyon and Clover Flat landfills exceeds current and projected solid waste demand, with enough permitted capacity to continue operation through 2030 and 2021, respectively. The Keller Canyon landfill has a remaining capacity of 64.8 million cubic yards, the Clover Flat landfill has a remaining capacity of 3,081,046 cubic yards and the Portero Hill landfill has a remaining capacity of 13,800,000 cubic yards, as of 2001.35 Using a per capita solid waste disposal estimate of 1.97 tons of solid waste per year, consistent with the analysis in

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the 2007 Napa County General Plan EIR,\textsuperscript{36} the 389 people anticipated under the programs and policies of the proposed Housing Element Update would produce approximately 766 tons of solid waste per year. The Keller Canyon, Clover Flat and Potrero Hill landfills have adequate capacity to serve this demand. Therefore, the proposed programs and policies would have a less than significant impact on solid waste.

\textit{ii. Housing Sites}

The solid waste providers and the County’s landfills have sufficient capacity to service the proposed housing sites. Upper Valley Disposal Services company and the Clover Flat landfill would accommodate the potential 191 units at the Angwin sites, the Berryessa Garbage Service and the Potrero Hill Landfill would accommodate the 296 potential units at the Moskowite Corner and Spanish Flat sites, and the Napa Recycling and Waste Services and the Keller Canyon Landfill would accommodate the 850 units at the Napa Pipe sites. Therefore, the solid waste impacts as a result of the housing sites proposed in the Housing Element Update would be less than significant.

\textbf{b. Non-Compliance with Statues and Regulations}

The five solid waste providers in Napa County are currently operating in accordance with State and federal regulations, with the Countywide Integrated Waste Management Plan and meeting the source reduction requirements of AB 939. The capacity of the Keller Canyon, Clover Flat and Potrero Hill landfills exceeds current and projected solid waste demand. In addition, the County’s Integrated Waste Management Plan would ensure continued compliance with AB 939 through the Source Reduction and Recycling Element (SRRE), Non-disposal Facility Element (NDFE) and Household Hazardous Waste Element (HHWE). There would be continued compliance of statues and regulations by the solid waste service providers under the Housing Element Update’s programs, policies and housing sites. Therefore, the Housing Element Update would have a less-than-significant impact on solid waste.

5. Cumulative Impacts
The 2007 Napa County General Plan EIR did not find any significant and unavoidable impacts related to solid waste services in Napa County and no significant impacts are identified in this EIR for the updated Housing Element. Future development on the Napa Pipe sites will be served by private solid waste management companies, which will be paid for by individual users. It is not expected that any new facilities will need to be constructed to serve full buildout of the Napa Pipe sites. Therefore, impacts associated with solid waste on the Napa Pipe sites would be less than significant and development on the Napa Pipe housing sites under the proposed Housing Element would not contribute to a significant cumulative impact.

6. Impacts and Mitigation Measures
All potential impacts related to solid waste services from the proposed Housing Element Update are less than significant. Therefore, there are no mitigation measures.

F. Public Schools

1. Regulatory and Policy Framework
Section 4.13.6.2 of the 2007 Napa County General Plan Draft EIR contains a detailed description of the regulatory framework related to schools in Napa County that includes State regulations and programs. These regulations and programs include the Leroy F. Greene School Facilities Act of 1998 (SB 50), the Kindergarten-University Public Education Facilities Bond Act of 2002 (Prop 47) and the California Department of Education. SB 50 allows school districts to apply for State construction and modernization funds and imposes limitations on the power of cities and counties to require the mitigation of school facilities impacts. SB 50 also allows school districts to levy develop-

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ment fees. Prop 47 was approved by voters in 2002 and provides a $13.05 billion bond to fund education facilities to relieve overcrowding and repair older schools. The California Department of Education’s School Facilities Planning Division (SFPD) publishes the School Site Selection and Approval Guide, which provides criteria for locating school sites. SFPD also issues the School Site Analysis and Development publication, which includes recommendations for school size. SFPD regulations and policies also govern health and safety as it pertains to school site selection.

This section contains updated policy information pertaining to Napa County’s General Plan.

a. Napa County General Plan
The Agricultural Preservation and Land Use Element of the Napa County General Plan contains the following policies related to schools.

Policy AG/LU-120: The County shall work with the school districts serving students in the County to coordinate the provision of school facilities in conjunction with demographic changes and student populations. The County shall also encourage incorporated jurisdictions to reserve school sites within their boundaries.

Policy AG/LU-121: The County shall coordinate an exchange of information with the school districts regarding school needs and new residential developments in the unincorporated area.

2. Existing Conditions
Section 4.13.6.1 of the 2007 Napa County General Plan Draft EIR contains a detailed description of existing school conditions in Napa County. There are six school districts serving Napa County: the Napa Valley Unified School District, the St. Helena Unified School District, the Calistoga Joint Unified School District, the Howell Mountain Elementary School District, the Pope Valley Union Elementary School District and the Fairfield-Suisun Joint Unified School District. For each of these school districts, the 2007 Napa County
General Plan EIR describes service area, number of schools, capacity and existing demand. Existing demand varies among the county’s school districts. For example, in the Napa Valley Unified School District, modular classrooms are used to accommodate increases in student population, while other districts, such as the St. Helena Unified School District and Pope Valley Union Elementary School District, have student populations that do not exceed capacity.

This section contains updated information pertaining to capacities of the school districts listed below. Capacity information for the Calistoga Joint Unified School District (CJUSD) was unavailable for this Draft EIR. According to the 2007 General Plan EIR, the CVUSD exceeds its current capacity of 815 students with a total enrollment of 950 students.

a. Napa Valley Unified School District
The Napa Valley Unified School District (NVUSD) can accommodate additional students at some, but not all, grade levels. It is projected that the elementary schools in the NVUSD would reach capacity in 2012, which is within the time frame of the proposed Housing Element Update. The middle schools have capacity to accommodate additional students throughout the time frame of the proposed Housing Element Update. The two high schools in the district are currently operating at capacity and are unable to accommodate students new to the district at this time.38

b. St. Helena Unified School District
The St. Helena Unified School District (USD) consists of four schools, all of which are located in the town of St. Helena. The St. Helena Primary School currently has 280 students in grades K-2. The St. Helena Elementary School currently has 280 students in grades 3-5. The Robert Louis Stevenson Middle School has 310 students in grades 6-8. The St. Helena High School has 500 students in grades 9-12. The St. Helena High School also accepts students

from Pope Valley and Howell Mountain Elementary Districts, because those districts do not have high schools. Kindergarten through fifth grade classes in the St. Helena USD have a maximum capacity of 20 students per class. Sixth through twelfth grade classes have a maximum capacity of 24 students per class.\(^{39}\)

c. Howell Mountain Elementary School District
The Howell Mountain Elementary School District (HMESD) consists of the Howell Mountain School, a K-8 school with a maximum capacity of 120 students. At the present time, the school is operating at capacity; however, existing facilities could be converted into classrooms to provide for an additional 20 students.\(^{40}\)

d. Fairfield-Suisun School District
The Fairfield-Suisun School District encompasses the southeastern portion of Napa County, although there are no schools in this area. The District office is located in Fairfield, with 29 schools serving K-12 students in Solano County.

e. Pope Valley Union Elementary School District
The Pope Valley Union Elementary School District (PVUESD) consists of one K-8 elementary school. At the present time, the school is operating within its capacity of 120 students with a current enrollment of 65 students.\(^{41}\)

3. Standards of Significance
A school impact is considered significant if implementation of the Housing Element Update would result in the following (based on State CEQA Guidelines Appendix G):


a. Substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services.

4. Impact Discussion
This section discusses the potential impacts regarding public schools as a result of the policies, programs and implementation of the proposed Housing Element Update. For each standard of significance, impacts are discussed separately in relation to the Housing Element’s programs and housing sites.

a. Substantial Adverse Physical Impacts Associated with the Provision of Government Facilities

i. Programs and Policies
Aside from the program to redesignate the Monticello Road Rural Residential area, the programs and policies of the proposed Housing Element do not specify exact locations for new housing units. It is assumed that these future housing units will be scattered throughout the county and the increase in residential population will generate new students for the school districts. Using the NVUSD student generation rate of 0.7 students per unit, the proposed programs and policies would generate approximately 107 additional students throughout the county. The six school districts in Napa County have varying capacities at varying levels to accommodate a portion of the residential units allowed under the proposed Housing Element Update. The construction of housing in the NVUSD, CJUSD, or HMESD, which are currently at or over capacity, would result in the need for new or expanded school facilities.

California Government Code Sections 65995 (h) and 65996 (b) provide mitigation for impacts to school facilities. Such mitigation measures include fees, charges, or requirements levied against construction, pursuant to Section

17620 of the Education Code. In addition, the County requires that project applicants proposing new housing units pay required school district fees, and submit proof that they have paid fees prior to permit issuance.

School construction or expansion projects would likely result in environmental impacts during construction and ongoing operations. Adverse impacts would be dependent on the characteristics of the school site, but could include impacts to air quality, noise, biological and cultural resources, public services and traffic. Specific locations of future schools have not been identified, and therefore site-specific environmental impacts of constructing new facilities cannot be determined at this time. The construction or expansion of such facilities would be regulated by pertinent federal, State and local regulations, and would undergo environmental review under CEQA. Environmental review will ensure that appropriate mitigation measures are developed and implemented as new facilities are constructed. For the purposes of this programmatic EIR, it is assumed that new or expanded school facilities would comply with such regulations and required CEQA mitigations, resulting in a less-than-significant impact.

ii. Housing Sites
   a) Angwin

Residences at the proposed Angwin sites would be served by the Howell Mountain Elementary School, a K-8 school, and St. Helena High School. Howell Mountain School is currently at capacity with 115 students; however, the school’s capacity could be increased from 120 students to 140 students if existing rooms on campus were converted to classrooms.43 Using the generation rate of the Howell Mountain School District, at 0.5 students per household, the 191 potential housing units at the Angwin sites would potentially generate 96 students for the K-8 grades at Howell Mountain School. The Howell Mountain School has capacity for new students, but the Elementary School could not accommodate more than 25 students. The Elementary is planning to construct additional facilities which would raise the school’s capacity.

maximum capacity to 220 students; however, these facilities would not be completed until 2015,\textsuperscript{44} the end of the planning timeframe for the proposed Housing Element Update. Therefore, the housing development on the Angwin sites could result in the need for new or expanded school facilities in the Howell Mountain School District.

Using the generation rate of the St. Helena USD, at 0.24 students per multi-family household, the 191 housing units at the Angwin sites would potentially generate approximately 46 students. According to a memorandum from the St. Helena USD, these students could not be accommodated using the school’s existing facilities. Furthermore, there is no funding to support high school students generated in the Howell Mountain Elementary School District, where there is no high school. The St. Helena USD is seeking a solution to this financial impact, but it is not known when that will occur.\textsuperscript{45} Because the existing school facility cannot serve the high school students generated by the Angwin sites, new or expanded school facilities in the St. Helena USD may also be required.

As described in Section F.4.a.i above, the construction of such facilities would likely result in environmental impacts, depending on the characteristics of the school site, that could affect air quality, noise, biological and cultural resources, public services and traffic. However, as stated above the location of new schools is not known at this time, and therefore site-specific environmental impacts cannot yet be evaluated. In addition, this construction would be regulated by pertinent federal, State and local regulations, and would undergo environmental review under CEQA. As discussed above, environmental review will ensure that mitigation measures are identified to mitigate potential impacts associated with the construction of new facilities. For the purposes of this programmatic EIR, it is assumed that new or expanded

\textsuperscript{44} Superintendent Tom Stubbs, Howell Mountain Elementary School District, personal communication, September 25, 2008.

school facilities would comply with such regulations and required CEQA mitigations, resulting in a less-than-significant impact.

b) Moskowite Corner
The Moskowite Corner housing sites would be served by the Napa Valley Unified School District (NVUSD). The NVUSD has elementary, middle and high schools. The elementary schools within NVUSD are approaching capacity and projected to reach capacity at 2012, which is during the time frame of the proposed Housing Element. The high schools within NVUSD are currently at capacity and are unable to accommodate additional students. The NVUSD middle schools are below capacity and are not projected to reach capacity during the timeframe of the proposed Housing Element.

Using the student generation rate for NVUSD, at 0.7 students per multi-family household, the 105 residential units proposed at Moskowite Corner would generate approximately 74 new students. It is assumed that these students would be among the various grade levels. NVUSD elementary and high schools are at or near capacity and would not be able to accommodate all of these students. Therefore, the housing development on the Moskowite Corner sites could result in the need for new or expanded school facilities. As described in Section F.4.a.i above, the construction of such facilities would likely result in environmental impacts, depending on the characteristics of the school site, that could affect air quality, noise, biological and cultural resources, public services and traffic. However, this construction would be regulated by pertinent federal, State and local regulations, and would undergo environmental review under CEQA. As discussed above, environmental review will ensure that mitigation measures are identified to mitigate potential impacts associated with the construction of new facilities. For the purposes of this programmatic EIR, it is assumed that new or expanded school facilities would comply with such regulations and required CEQA mitigations, resulting in a less-than-significant impact.
c) Spanish Flat

Residents at the Spanish Flat housing sites would be served by the St. Helena USD, which offers K-12 education through its four schools. As stated above, the St. Helena Primary School currently offers grades K-2, the St. Helena Elementary School offers grades 3-5, the Robert Louis Stevenson Middle School offers grades 6-8 and the St. Helena High School offers grades 9-12.

For multi-family housing units, the St. Helena USD uses a generation rate of 0.24 students per housing unit. Using this student generation rate, the 99 residential units proposed at the Spanish Flat sites would generate approximately 24 students. According to a memorandum from the St. Helena USD, these students generated at the Spanish Flat sites could not be accommodated using the school’s existing facilities. Therefore, new or expanded school facilities in the St. Helena USD may also be required.

As described in Section F.4.a.i above, the construction of such facilities would likely result in environmental impacts, depending on the characteristics of the school site, that could affect air quality, noise, biological and cultural resources, public services and traffic. However, as stated above the location of new schools is not known at this time, and therefore site-specific environmental impacts cannot yet be evaluated. In addition, this construction would be regulated by pertinent federal, State and local regulations, and would undergo environmental review under CEQA. As discussed above, environmental review will ensure that mitigation measures are identified to mitigate potential impacts associated with the construction of new facilities. For the purposes of this programmatic EIR, it is assumed that new or expanded school facilities would comply with such regulations and required CEQA mitigations, resulting in a less-than-significant impact.

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d) Napa Pipe

The Napa Pipe housing sites would be served by the NVUSD. The 805 residential units proposed at Napa Pipe would generate approximately 564 new students. It is assumed that these students would be among the various grade levels; however, the NVUSD high schools would not be able to accommodate all of these students. Therefore, the housing development on the Napa Pipe sites could result in the need for new or expanded school facilities. As described in Section F.4.a.i above, the construction of such facilities would likely result in environmental impacts, depending on the characteristics of the school site, that could affect air quality, noise, biological and cultural resources, public services and traffic. However, this construction would be regulated by pertinent federal, State and local regulations, and would undergo environmental review under CEQA. As discussed above, environmental review will ensure that mitigation measures are identified to mitigate potential impacts associated with the construction of new facilities. For the purposes of this programmatic EIR, it is assumed that new or expanded school facilities would comply with such regulations and required CEQA mitigations, resulting in a less-than-significant impact.

5. Cumulative Impacts

The 2007 Napa County General Plan EIR did not find any significant and unavoidable impacts related to school services in Napa County, nor does this EIR for the Housing Element update.

As described in Section F.4.a.ii.d above, the NVUSD does not have sufficient capacity to serve the students generated in the first phase of the Napa Pipe project (the portion included in the proposed Housing Element). Therefore, it is evident that new or expanded schools will also be required with full buildout of the Napa Pipe project. As described in Section F.4.a.i above, the construction of new facilities would likely result in environmental impacts, depending on the characteristics of the school site, that could affect air quality, noise, biological and cultural resources, public services and traffic. However, this construction would be regulated by pertinent federal, State and local regulations, and would undergo environmental review under CEQA. It is
assumed that new or expanded school facilities would comply with such regulations and required CEQA mitigation, resulting in a less-than-significant impact. Therefore, development on the Napa Pipe housing sites under the proposed Housing Element would not contribute to a significant cumulative impact.

6. Impacts and Mitigation Measures
All potential impacts related to school services from the proposed Housing Element Update are less than significant. Therefore, there are no mitigation measures.

G. Electricity and Natural Gas

1. Regulatory and Policy Framework
Section 4.13.7.2 of the 2007 Napa County General Plan Draft EIR contains a detailed description of the regulatory framework related to electricity and natural gas in Napa County. The California Building Energy Efficiency Standards are intended to reduce the State’s energy consumption.

This section contains updated regulatory and policy information pertaining to the current California Building Energy Efficiency Standards and Napa County’s General Plan.

a. California Building Energy Efficiency Standards
the 2005 California Energy Code has been republished as the 2007 California Energy Code, with all previously approved errata and supplements. 47

b. Napa County General Plan
The Conservation Element of the Napa County General Plan contains the following goals and policies related to electricity and natural gas.

**Goal CON-16:** Promote the economic and environmental health of Napa County by conserving energy, increasing the efficiency of energy use, and producing renewable energy locally.

**Policy CON-68:** The County shall promote research and the development and use of advanced and renewable energy technology through the following actions:

a. Use expedited permit processing or other incentives as promotion mechanisms.

b. Assist in securing grants to support the implementation of photovoltaic, wind, and other renewable energy technologies to provide a portion of the County’s energy needs.

c. Encourage the use of renewable energy resources in residential, commercial, industrial, and agricultural projects and uses.

**Policy CON-70:** The County shall seek to increase the amount of energy produced through locally available energy sources, including establishing incentives for, and removing barriers to, renewable and alternative energy resources (solar, wind) where they are compatible with the maintenance and preservation of environmental quality.

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2. Existing Conditions

Section 4.13.7.1 of the 2007 Napa County General Plan Draft EIR contains a detailed description of existing electricity and natural gas conditions in Napa County.

In regard to electricity, the 2007 Napa County General Plan Draft EIR describes existing energy producing facilities, electrical consumption, electrical transmission and transmission capacity. Napa County currently consumes more energy than it produces. The majority of electricity in the county is produced and delivered by Pacific Gas & Electric (PG&E), which provides electrical energy to residential, commercial, industrial, mining, agricultural, transportation, communication and utility service provider uses. There are six existing energy producing facilities in the county, including: Monticello Dam, American Canyon power plant, Napa State Hospital plant, Pacific Union College plant, Yountville COGEN and Soscol Water Recycling Facility. Peak electrical demands in the county are typically higher in the hot and dry summer months. There are three major transmission corridors and eleven electrical substations located throughout the county.

In regard to natural gas, the 2007 Napa County General Plan Draft EIR describes natural gas consumption, natural gas transmission and vehicle energy consumption. Napa County must purchase and import all of its natural gas because it does not contain any natural gas producing facilities. The primary natural gas transmission pipelines in the county are located in the southern and western portions of the county and consist of two 12-inch diameter pipelines that run northwest through Napa Valley.

This section does not contain any new or updated information pertaining to existing conditions.

3. Standards of Significance

An electricity or natural gas impact is considered significant if implementation of the Housing Element Update would result in the following (based on State CEQA Guidelines Appendix G):
a. Substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services.

4. Impact Discussion
This section discusses the potential impacts regarding electricity and natural gas services as a result of the policies, programs and implementation of the proposed Housing Element Update. For each standard of significance, impacts are discussed separately in relation to the Housing Element’s programs and housing sites.

a. Substantial Adverse Physical Impacts Associated with the Provision of Government Facilities
   i. Programs and Policies
   The county’s energy providers have sufficient electrical transmission capacity and natural gas resources to accommodate demand until 2011. To accommodate demand after 2011, PG&E will increase capacity of its Tulucay and Pueblo substations, and these projects are already underway. Therefore, these projects have undergone appropriate environmental review to evaluate and mitigate potential impacts.

   The number of residential units proposed by programs and policies within the Housing Element Update could potentially generate 389 new residents in the unincorporated county. Each new resident would increase the demand for electricity by 2.95 barrel of oil equivalents (BOEs) of natural gas and other gas resources (e.g. propane), according to the 2003 figures presented in the Napa County Baseline Data Report. Additionally, each new resident would increase electrical consumption by another 2.95 BOEs. In total, the Housing

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49 County of Napa, Baseline Data Report, Chapter 5 Energy and Resources pages 5-4 and 5-6.
Element Update programs and policies would require an increase of 1,148 BOEs to meet the increased demand for natural gas, and another 1,148 BOEs to meet the increased demand for electricity.

Given that PG&E already has projects underway to provide additional capacity to serve additional development countywide through 2030, and that all new developments are required to comply with the Title 24, California Code of Regulations regarding energy conservation, impacts to electricity and natural gas from the programs and policies under the proposed Housing Element Update would be considered less than significant.

**ii. Housing Sites**

The potential housing sites proposed by the Housing Element Update could potentially generate 3,162 new residents in Napa County. In total, these units would require an increase of 9,328 BOEs to meet the increased demand for natural gas, and another 9,328 BOEs to meet the increased demand for electricity.

Given that PG&E already has projects underway to provide additional capacity to serve additional development countywide through 2030, and that all new developments are required to comply with the Title 24, California Code of Regulations regarding energy conservation, impacts to electricity and natural gas from the housing sites in the proposed Housing Element Update would be considered less than significant.

**5. Cumulative Impacts**

The 2007 Napa County General Plan EIR did not find any significant and unavoidable impacts related to electricity and natural gas services in Napa County, and no additional impacts are found in this EIR. Therefore, this project would not contribute to any significant and unavoidable electricity and natural gas service impacts.
6. Impacts and Mitigation Measures
All potential impacts related to electricity and natural gas provision from the proposed Housing Element Update are less than significant. Therefore, there are no mitigation measures.

H. Social Services

1. Regulatory and Policy Framework
The 2007 Napa County General Plan Draft EIR does not contain any regulatory information related to social services in Napa County.

This section contains policy information pertaining to Napa County’s General Plan.

a. Napa County General Plan
The Agricultural Preservation and Land Use Element of the Napa County General Plan contains the following goal related to social services.

Goal AG/LU-7: Plan for demographic changes, environmental or climatic changes, and desired social services when siting public facilities and when considering the design of those facilities.

2. Existing Conditions
Section 4.13.8.1 of the 2007 Napa County General Plan Draft EIR contains a detailed description of existing social service conditions in Napa County. The 2007 Napa County General Plan Draft EIR provides information for six social service providers: Public Assistance, Cal-Works, Child Protective Services (CPS), Adult Protective Services, In-Home Supportive Services and Veteran’s Services. For each of these providers, the 2007 Napa County General Plan Draft EIR describes service area, facilities, capacity, existing demand, planned improvements and service standards. All of the providers service the entire county. Three of the service providers – Adult Protective Services, In-Home Supportive Services and Veteran’s Services – currently have sufficient
staff, while Public Assistance, Cal-Works and CPS each report some level of understaffing.

This section does not contain any new or updated information pertaining to existing conditions.

3. Standards of Significance
A social service impact is considered significant if implementation of the Housing Element Update would result in the following (based on State CEQA Guidelines Appendix G):

a. Substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services.

4. Impact Discussion
This section discusses the potential impacts regarding social services as a result of the policies, programs and implementation of the proposed Housing Element Update. For each standard of significance, impacts are discussed separately in relation to the Housing Element’s programs and housing sites.

a. Substantial Adverse Physical Impacts Associated with the Provision of Government Facilities
i. Programs and Policies
The addition of new housing units throughout the county would increase demand for social services. Of the six social service providers discussed in the 2007 Napa County General Plan Draft EIR, Cal-Works and CPS reported planned improvements. Specifically, these services would require additional staff to meet the increased demand for social services, as the programs are currently understaffed. The only planned improvement at this time is the addition of an express lane at the County’s Public Assistance Program. However, this improvement would occur at the existing facility, and it is anticipated
that there would be little or no impacts to the physical environment. Any other improvements are administrative in nature. Because only limited improvements are required to accommodate the growth under the proposed programs and policies, the implementation of the Housing Element Update would result in less than significant impacts from the provision of social services.

ii. Housing Sites
The development of the potential housing sites allowed by the Housing Element would increase the population in the county, and in concert, the demand for social services. The social service providers in the county have identified planned improvements needed to accommodate the increase in demand for social services; however, these improvements would be minor and would not impact the physical environment. Because only limited improvements are required to accommodate the growth under the proposed housing sites, the implementation of the Housing Element Update would result in less than significant impacts from the provision of social services.

5. Cumulative Impacts
The 2007 Napa County General Plan Draft EIR did not find any significant and unavoidable impacts related to social services in Napa County, and nor did this EIR. Therefore, this project would not contribute to any significant and unavoidable social service impacts.

6. Impacts and Mitigation Measures
All potential impacts related to social service provision from the proposed Housing Element Update are less than significant. Therefore, there are no mitigation measures.

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1. Parks and Recreation

1. Regulatory and Policy Framework

Section 4.13.9.2 of the 2007 Napa County General Plan Draft EIR contains a detailed description of the regulatory framework related to parks and recreation in Napa County that includes State and local regulations. The State regulation described is the Quimby Act, which states that cities and counties may require by ordinance the dedication of land or payment of in lieu fees for park and recreational purposes as a condition of development approval. The Quimby Act applies only to the acquisition of parkland, and cannot be applied to the development of park facilities or operations. The local regulation described in the 2007 Napa County General Plan Draft EIR pertains to the Napa County Park and Open Space Advisory Committee (the Committee). The Committee was created to determine the vision, structure and goals of Napa County’s future parks organization. The Committee was dissolved when the Napa County Park and Open Space District was created.

This section contains updated policy information pertaining to Napa County’s General Plan.

a. Napa County General Plan

The Recreation and Open Space Element of the Napa County General Plan contains the following policies pertaining to parks and recreation.

**Policy ROS-1:** The County encourages the acquisition, location, design, management, and operation of recreational open space and facilities, in ways that protect natural resources, enhance natural habitats, conserve agricultural lands, maintain agricultural productivity, and respect private property. The County shall coordinate with and support the Napa County Regional Park and Open Space District in implementing this policy.

**Policy ROS-2:** The regulatory review process and criteria for recreational facilities and activities should be tailored to reflect the intensity, location, and potential impact of the type of recreation proposed.
Policy ROS-3: Recreational facilities and improvements on open space lands should be the minimum necessary to achieve recreation objectives and be limited in density, intensity, need for public services, impacts on the natural environment, growth inducement, and impacts on neighboring properties. Uses on open space lands shall respect the character of the surrounding area, require a minimum of public support services (such as paved roads, emergency services, or law enforcement); contain a minimum of paved surfaces, structures, natural landform alteration or other introduced or constructed features inconsistent with the environment; require minimal water usage, wildlife habitat removal and usage of herbicides and pesticides; be coordinated with neighbors in terms of integrated pest management procedures; and shall not contribute to the likelihood that additional nonagricultural uses of agricultural land will be proposed to support or be accessory to the continued existence of the recreational use.

Policy ROS-8: Minimize potential negative impacts of proposed open space improvements and uses through appropriate design and by requiring mitigation for any remaining significant impacts.

2. Existing Conditions
Section 4.13.9.1 of the 2007 Napa County General Plan Draft EIR contains a detailed description of the existing parks and recreation conditions in Napa County. The majority of Napa County’s open spaces is under private ownership and is used for a variety of uses, including farming, grazing, rural residences, hunting, fishing, biking and privately-sponsored events. Approximately 4 percent of privately-owned open spaces are protected through permanent conservation easements. The majority of publicly-owned open spaces and dedicated open spaces are located in the eastern portion of the county. The federal government is the largest public landholder in Napa County, overseeing approximately 63,000 acres of land. Lake Berryessa is a prominent recreational and open space amenity in the county, and is under the jurisdiction of the Bureau of Reclamation.
This section does not contain any new or updated information pertaining to existing conditions.

3. Standards of Significance
An impact to parks and recreation is considered significant if implementation of the Housing Element Update would result in the following (based on State CEQA Guidelines Appendix G):

a. Increased demand for recreational opportunities and facilities resulting in the need to construct or expand recreational facilities, which might have an adverse physical effect on the environment.

4. Impact Discussion
This section discusses the potential impacts regarding parks and recreation as a result of the policies, programs and implementation of the proposed Housing Element Update. For each standard of significance, impacts are discussed separately in relation to the Housing Element’s programs and housing sites.

a. Construction or Expansion of Recreational Facilities
i. Programs and Policies
Aside from the program to redesignate the Monticello Road Rural Residential area, the programs and policies of the proposed Housing Element do not specify exact locations for new housing units. It can be expected that these future housing units will be scattered throughout the county. New residents would increase the demand for recreational opportunities and facilities, however, the demand would be distributed throughout the county. No single recreational facility would experience significant physical deterioration from an increase in demand. There are over 30,000 acres of open space and parkland in unincorporated Napa County, including publicly accessible trails and access to recreation destinations such as Lake Berryessa. The 389 new residents of units developed under the proposed Housing Element Update would be expected to increase the use of these existing facilities throughout the County, but this increase in users is not substantial enough to require the creation of additional park facilities or improvements to existing facilities. Therefore, the implementation of the Housing Element Update programs and
policies would result in less than significant impacts from the provision of recreational opportunities and facilities.

ii. Housing Sites
The development of the potential housing sites allowed by the Housing Element would increase the population in the county, and in concert, the demand for recreational opportunities and facilities. It is anticipated, however, that the amount of existing parkland near the potential housing sites is sufficient to accommodate the increase in demand and no improvements are necessary. Because the proposed housing sites are located in four separate areas of the county, park use by residents of the proposed development would not degrade the quality or require expansion or improvement of any particular recreational facility. Furthermore, the Affordable Housing Combination District (AHCMD) zoning overlay on the Angwin, Spanish Flat and Moskowite Corner sites includes open space and playground equipment requirements. Development of the Napa Pipe sites has the potential to increase the use of Kennedy Park. However, project-specific environmental review and discretionary approval will be required for development of the Napa Pipe sites. These review procedures will ensure that future development complies with General Plan Policy ROS-24(b), which states that new multi-family housing development projects must provide recreational facilities or help to fund planned facilities in order to mitigate impacts to existing facilities.

Therefore, the housing sites proposed under the Housing Element Update would result in less than significant impacts from the provision of recreational opportunities and facilities.

5. Cumulative Impacts
The 2007 Napa County General Plan EIR and this EIR did not find any significant and unavoidable impacts related to parks and recreation services in Napa County. Therefore, this project would not contribute to any significant and unavoidable parks and recreation service impacts.
6. Impacts and Mitigation Measures

All potential impacts related to park and recreation provision from the proposed Housing Element Update are less than significant. Therefore, there are no mitigation measures.
This chapter describes the potential effects of the proposed Housing Element on visual resources, light and glare. All relevant information related to the regulatory framework and existing conditions identified in Chapter 4.14 of the 2007 Napa County General Plan Draft EIR is incorporated by reference and briefly summarized. New and updated information pertaining to visual resource regulations and existing conditions is also included.

A. Regulatory and Policy Framework

Section 4.14.2 of the 2007 Napa County General Plan Draft EIR contains a detailed description of the regulatory framework related to visual resources in the project area, which includes federal, State and local regulations and policies.

The federal Highway Beautification Act of 1965 protects rural and scenic areas of highways from “billboard blight.” The Highway Beautification Act only applies to one roadway in Napa County, a 1-mile segment of Interstate 80 passing through Napa County’s southeast corner.

The relevant State policies and programs include the State Scenic Highway Program, which applies to three state routes in Napa County, and the Title 24 Outdoor Lighting Standards, which help reduce impacts associated with light pollution, light trespass and glare.

The local regulations related to visual resources include the Napa County Viewshed Protection Combination District and the Napa County Viewshed Protection Program, which are both ordinances in the Napa County Code that protect scenic resources along County roads and highways.

1. Napa County General Plan

This section contains updated regulatory information pertaining to Napa County’s General Plan. The Community Character Element of the Napa County General Plan contains the following goals and policies regarding visual resources.
Goal CC-1: Preserve, improve and provide visual access to the beauty of Napa County.

Goal CC-2: Continue to promote the diverse beauty of the entire county since this beauty is intricately linked to the continued economic vitality of the region and benefits residents, businesses and visitors.

Policy CC-1: The County will retain the character and natural beauty of Napa County through the preservation of open space.

Policy CC-4: Consistent with current regulations regarding road setbacks and fences, the County shall preserve the existing significant natural features by requiring all development to retain the visually open, rural character of the County and by allowing solid sound walls only in unique circumstances and where acceptable noise levels are exceeded.

Policy CC-5: Recognizing that vineyards are an accepted and attractive visual feature of Napa County, but that visual changes can cause public concern, the County shall require the retention of trees in strategic locations when approving conversion of existing forested land to vineyards in order to retain landscape characteristics of the site when viewed from public roadways and shall require the retention of trees to screen non-agricultural activities and other proposed developments.

Policy CC-10: Consistent with the County’s Viewshed Protection Program, new developments in hillside areas should be designed to minimize their visibility from the County’s scenic roadways and discourage new encroachments on natural ridgelines. The County shall continue implementation of the Viewshed Protection Program and shall apply the protective provisions of the program to all public projects.

Policy CC-13: To the extent allowed by law, telecommunications facilities and transmission lines shall not be located within view of any scenic roadway.
unless they are sites and designed so as to be virtually invisible to the naked eye from the roadway, are designed to appear as a natural feature of the environment and do not block views or disrupt scenic vistas, or are so well architecturally-integrated into an existing building as to effectively be unnoticeable.

**Policy CC-14**: Adjacent to scenic roadways, utilities shall be placed underground where possible.

**Goal CC-6**: Preserve and enhance the night environment of the county’s rural areas and prevent excessive light and glare.

**Policy CC-33**: The design of buildings visible from the County’s designated scenic roadways shall avoid the use of reflective surfaces which could cause glare.

**Policy CC-34**: Consistent with Building Code requirements for new construction in rural areas, nighttime lighting associated with new developments shall be designed to limit upward and sidewalks spillover of light. Standards shall be as specific in the most recent update of the “Nonresidential Compliance Manual for California’s 2005 Energy Efficiency Standards” or the “Residential Compliance Manual for California’s 2005 Energy Efficiency Standards” published by the State of California. Light timers and motion sensors shall be used wherever feasible.

2. **Viewshed Protection Program**

The Viewshed Protection Program originated with the Viewshed Protection Ordinance that the Napa County Board of Supervisors passed in December 2001. Under the Program, hillside development standards minimize the impact of man-made structures on views of existing landscapes and open spaces, as seen from designated public roads.¹

B. Existing Conditions

Section 4.14.1 of the 2007 Napa County General Plan Draft EIR contains a detailed description of the visual resource conditions in Napa County. Napa County’s visual resources include viewsheds, scenic corridors and ridgelines, and several prominent natural features contribute to the highly appealing visual characteristics of the county. Ridgelines frame the eastern and western boundaries of Napa County, providing distinct valley regions and scenic slopes, some of which are densely forested and some of which are characterized by shrub and grassland sparsely speckled with mature oak trees. The mountain foothills to the east and west of the valley floor provide the viewsheds with the highest visibility in the county, although other roadways and sloped areas also provide attractive viewsheds. Many highways and local roads serve as scenic corridors through the county’s valleys, ridgelines and vineyards. Napa County contains approximately 280 miles of County-designated scenic roadways. Information regarding the existing visual character of the housing sites is included throughout the Section D, below.

C. Standards of Significance

A visual resources impact is considered significant if implementation of the Housing Element Update would result in any of the following (based on State CEQA Guidelines Appendix G):

1. Substantial adverse effect on a scenic vista;

2. Substantial effect on scenic resources or scenic views, including trees, rock outcroppings or historic buildings within a State Scenic Highway, designated County Scenic Roadway, Scenic River Corridor, roadway eligible for listing as a scenic roadway/highway or other public vantage point or scenic vista locally known for its scenic qualities;

3. Substantial degradation of the existing visual character or quality of the county; or
4. Creation of a new source of substantial light or glare that would adversely affect daytime or nighttime views within the county.

D. Impact Discussion

This section discusses the potential impacts to Napa County’s visual resources as a result of the policies, programs and implementation of the proposed Housing Element. For each standard of significance, impacts are discussed separately in relation to the proposed Housing Element’s programs and housing sites.

1. Adverse Effects on a Scenic Vista, Scenic Resources or Scenic Views
   a. Programs and Policies

   For the purposes of this analysis, scenic vistas include views of the unique scenic quality of Napa County, including its ridgelines and hillsides that are visible from public areas. Scenic routes include scenic roadways as identified in the Napa County General Plan. There are no officially-designated State Scenic Highways in Napa County, although some roadways are eligible to be considered for designation.

   The implementation of the proposed programs and policies could potentially result in the construction of housing in a scenic vista or the viewshed of one or more of the County’s designated scenic routes. However, new units constructed under programs encouraging second units, farmworker housing, increased density in mobile home parks, and accessory units on CL/CN parcels would be subject to review under the County’s Viewshed Protection Program and would often be constructed on parcels that are already developed with residential buildings, commercial buildings, or intensive agriculture, where a change in visual character would not be significant.

   In addition, Napa County’s Viewshed Design Manual and the provisions of the Viewshed Protection Program (Chapter 18.106) would prevent potential impacts to scenic vistas and roadways. With these existing policies, ordinances and programs in place, significant impacts on scenic vistas and roadways
would be prevented as housing development occurs under the proposed policies and programs in Napa County. Therefore, impacts on scenic resources would be less than significant.

b. Housing Sites
   i. Angwin, Spanish Flat and Napa Pipe

   Future housing development on Angwin Site B and Spanish Flat Sites E and F could adversely affect scenic vistas. Angwin Site B is bordered by sloped grasslands and undeveloped forest lands, and is part of a rural and aesthetically appealing viewshed that could be negatively impacted by new development. Spanish Flat Sites E and F form the foregrounds of attractive scenic views of sloped grasslands and mature trees, including oaks. Depending on the design of the development, new housing on Angwin Site B and Spanish Flat Sites E and F could have adverse effects on scenic vistas.

   In addition, Spanish Flat Sites C, D, E and F are visible from Berryessa-Knoxville Road, which is a County-designated scenic route. Therefore, new development on these sites would have the potential to adversely affect a County-designated route. However, existing Napa County programs and policies would protect scenic routes from negative impacts associated with development on the Spanish Flat sites.

   In addition, implementation of the design standards included in the :AHCD (Napa County Code Chapter 18.82.070), Napa County’s Viewshed Design Manual and the provisions of the Viewshed Protection Program (Chapter 18.106) would prevent potential impacts to scenic vistas and scenic routes. With these existing policies, ordinances and programs in place, significant impacts on scenic vistas and scenic routes as a result of developing Angwin Site B and Spanish Flat Sites C, D, E and F would be less than significant.2

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2 In the 2004 EA, these sites were found to have a significant impact on scenic vistas and scenic routes, with a mitigation measure to follow the :AHCD Affordable Housing Combination District design standards. Because these sites are all subject to the :AHCD design standards, which were not in place prior to the 2004 EA but
The remaining sites in Angwin, Spanish Flat and Napa Pipe are not part of a scenic vista, scenic resource or scenic route. Angwin Site A is located in a low-lying area and is blocked from view from surrounding areas by hills to the west, vegetation to the east, and development to the north and south. It is not visible from the nearest County-designated scenic route, Howell Mountain Road. Spanish Flat Sites A and B are part of limited viewsheds of the range of low hills that border Lake Berryessa, and of existing development. They are not part of a scenic vista, and are not visible from a County-designated scenic route. Napa Pipe Sites A and B are currently used for light industrial operations, and are surrounded by similar uses. These sites are not part of a scenic vista, and are not visible from a County-designated scenic route.

ii. Moskowite Corner

All of the Moskowite Corner sites are part of the highly scenic vista of rural Capell Valley and are visible from Highway 128, a County-designated scenic route. Site C is also visible from Highway 121, another County-designated scenic route. Most of the land in these viewsheds is undeveloped, with the exception of some agricultural uses and unobtrusive structures. New development on Sites C and D could potentially be screened from view because of their topography, so impacts associated with development on Sites C and D would be reduced to less-than-significant levels through compliance with the ordinances described above. However, Moskowite Corner Sites A and B are clearly visible from Highway 128 and Steele Canyon Road, and the sites’ flat topography would make it impossible to screen development without blocking the scenic view of the Capell Valley from Highway 128. Therefore, housing developed on the Moskowite Corner Sites A and B could therefore create a significant impact on scenic vistas and scenic routes requiring mitigation.

which have now been adopted by the County, this EIR finds the impacts to be less than significant.
2. Degradation of the Existing Visual Character or Quality of Napa County
   
a. Programs and Policies
   The proposed programs and policies do not designate any areas for concentrated housing development in unincorporated Napa County. Therefore, there would be no single area of the county that would experience significant visual changes due to the proposed policies and programs. In addition, new units constructed under programs encouraging second units, farmworker housing, increased density in mobile home parks, and accessory units on CL/CN parcels would be required to conform with the Viewshed Protection Program and many would be constructed on parcels that are already developed with residential buildings, commercial buildings, or intensive agriculture, where a change in visual character would not be significant.

   In addition, Napa County’s *Viewshed Design Manual* and the provisions of the Viewshed Protection Program (Chapter 18.106) would prevent potential impacts to visual character or quality. With these existing policies in place, adverse effects on the existing visual character would be *less than significant*.

b. Housing Sites
   Many of the housing sites in the proposed Housing Element are aesthetically appealing undeveloped pieces of land that are characteristic of Napa County’s attractive and distinctive landscape. Impacts on the visual quality and character as a result of development on housing sites will be dependent on future site designs and building proposals, which are currently unknown.

   However, all future development will be subject to existing regulations that would prevent impacts to visual character on the housing sites. As described above, implementation of the design standards included in the :AHCD (Napa County Code Chapter 18.82.070), Napa County’s *Viewshed Design Manual* and the provisions of the Viewshed Protection Program (Chapter 18.106) would prevent potential impacts of development on the Angwin, Moskowite Corner and Spanish Flat sites to visual character or quality. With these exist-
ing policies in place, adverse effects on the existing visual character of these sites would be *less than significant*.\(^3\)

Although the Napa Pipe site is subject to the *Viewshed Design Manual* and the Viewshed Protection Program, it is not subject to the design standards of the :AHCD. The site is currently used for and surrounded by light industrial, but there are areas of open space and view corridors to the Napa River from State Route 29. Housing development on this site will constitute a significant change in visual character given the change from industrial and open space to high density residential. Because of the magnitude of visual change and the possible impacts on the view corridors to the Napa River, development on the Napa Pipe site could cause a *significant* impact on the visual character of the site requiring mitigation.

### 3. New Sources of Substantial Light or Glare

**a. Programs and Policies**

Although the proposed programs and policies allow for the construction of new housing, these housing units will either be on parcels already containing housing units or will be built to fit a rural or agricultural context. In addition, all future development will be subject to Building Code standards that would prevent potential impacts associated with light and glare. With these existing regulations in place, future housing constructed under these programs and policies would not bring about substantial outdoor lighting or create new sources of substantial glare. Potential impacts on light or glare are considered to be *less than significant*.

**b. Housing Sites**

Residential development on the proposed housing sites has the potential to increase glare conditions during the day through the use of reflective and pol-

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\(^3\) In the 2004 EA, these sites were found to have a significant impact on the visual character of the sites and their surroundings, with a mitigation measure to follow the :AHCD Affordable Housing Combination District design standards. Because these sites are all subject to the :AHCD design standards, this EIR finds the impacts to be less than significant.
ished building materials and during the night through outdoor landscaping lighting and street lighting on residential streets. Impacts related to light and glare as a result of development on the proposed housing sites will be dependent on future site designs and building proposals, which are currently unknown.

However, all future development will be subject to existing policies and regulations that would prevent potential impacts associated with light and glare. Building Code standards would prevent potential impacts associated with light and glare, and the design standards included in the :AHCD (Napa County Code Chapter 18.82.070) require that all exterior lighting be shielded and directed downward. With these existing regulations in place, future development on the housing sites would not bring about substantial outdoor lighting or create new sources of substantial glare. Potential impacts on light or glare are considered to be less than significant.⁴

E. Cumulative Impacts

The 2007 Napa County General Plan Draft EIR did not find any significant and unavoidable impacts related to visual resources, light and glare in Napa County. This project would not contribute to any cumulative impacts related to visual resources, light and glare because associated development would be scattered and would conform with the County’s Viewshed Protection Program.

⁴ In the 2004 EA, the Angwin, Moskowitz Corner and Spanish Flat sites were found to have a significant impact with respect to light or glare, with a mitigation measure to follow the :AHCD Affordable Housing Combination District design standards. Because these sites are all subject to the :AHCD design standards, this EIR finds the impacts to be less than significant.
F. Impacts and Mitigation Measures

Impact VIS-1: Moskowite Corner Sites A and B are part of scenic vistas and visible from County-designated scenic routes. Due to the flat topography, new development could not be screened without blocking the scenic vista or viewshed of Highway 128. No feasible mitigation measure was identified to reduce this impact. Therefore, the impact of developing on Moskowite Corner Sites A and B is significant and unavoidable.

Impact VIS-2: Housing development on the Napa Pipe site will constitute a significant change in visual character and could impact view corridors to the Napa River from public rights-of-way such as State Route 29.

Mitigation Measure VIS-2: Prior to approval of a development agreement for the Napa Pipe site, require the creation of design guidelines and ensure their use to preserve view corridors to and from the Napa River.

Significance After Mitigation: Less than significant.
CEQA Guidelines require that an EIR include the description and comparative analysis of alternatives to the proposed project, including both a No Project Alternative and a reasonable range of alternatives that could feasibly attain the project’s objectives. This chapter also includes a discussion of Alternatives Rejected from Further Consideration.

The following discussion is intended to inform the public and decision makers of feasible alternatives to the proposed Housing Element Update. Each alternative is analyzed against the impact factors considered in Chapter 4.

The alternatives to the proposed Housing Element are:

- **The No Project Alternative**: Under this alternative, Napa County’s Housing Element would not be updated to meet ABAG Fair Share requirements and the policies and programs of the 2004 Napa County Housing Element would remain in effect. Napa Pipe would remain industrial.

- **Regional Housing Needs Allocation Transfer Alternative.** Under this alternative, Napa County would work with the Cities of Napa and American Canyon to create an agreement wherein the County would transfer a substantial portion of its 2007 to 2014 Regional Housing Needs Allocation to one or both of the cities. Napa Pipe would remain industrial.

**A. Alternatives Rejected from Further Consideration**

Several alternative housing sites were considered for inclusion in the proposed Housing Element but were not selected for in depth analysis. These sites were determined to be unsuitable for consideration for affordable housing projects for reasons described below.

1. **Coombsville and Big Ranch Road Rural Residential Areas**

The Coombsville and Big Ranch Road Rural Residential areas are located close to the City of Napa. Despite this proximity, these areas are considered
to be unsuitable for multi-family affordable housing sites because they are largely built out with rural residential development (in the case of Coombsville) and are in active agricultural use (in the case of Big Ranch Road). In addition, portions of the Coombsville Rural Residential Area are located within the Lower Milken-Sarco-Tulocay Creek (MST) groundwater deficient basin, and neither Coombsville nor Big Ranch Road have access to water services from the City of Napa. A 2003 U.S. Geological Survey study found that groundwater is being depleted the MST basin. Thus, due to existing land use patterns and water supply concerns, the Coombsville and Big Ranch Road areas were rejected from further consideration.

2. Napa Airport Industrial Area
The Napa Airport industrial area is currently zoned for industrial use. Napa County has a long-term commitment to protecting the Napa Airport from encroachment of residential uses, which are viewed as incompatible with airport operations. The Airport Land Use Compatibility Plan guides land use decisions in the area and ensures that future development near the airport is compatible with the airport’s uses. In order to comply with the Airport Land Use Compatibility Plan and prevent land use conflicts between future development near the airport, the Napa Airport industrial area was not included in the proposed Housing Element.

3. Calistoga Fairgrounds and Other County-Owned Sites
The County owns approximately 70 acres of land within the City of Calistoga and a substantial amount of land within the City of Napa where the County’s administrative and social service functions are located. These sites were considered as potential housing sites but were rejected from further consideration because they are unlikely to be available for housing development during the timeframe of the 2007 to 2014 housing cycle. Also,

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any sites within the spheres of influence of incorporated cities generally accrue to the cities under State law.

B. The No Project Alternative

This section qualitatively evaluates the potential environmental impacts of the No Project Alternative, which is required under CEQA to be considered in an EIR.

1. Principal Characteristics

Under the No Project Alternative, Napa County’s Housing Element would not be updated to meet ABAG Fair Share requirements and the policies and programs of the 2004 Napa County Housing Element would remain in effect. Therefore, new programs and policies in the proposed Housing Element would not be implemented. Under the No Project Alternative:

♦ The new programs and policies allowing second units on parcels zoned Agricultural Preserve (AP), implementing a density bonus on mobile home parks, allowing accessory units on parcels zoned Commercial Limited (CL) or Commercial Neighborhood (CN) and redesignating 61 parcels in the Monticello Road area from Rural Residential to Urban Residential would not be implemented.

♦ The Napa Pipe site would not be identified as a potential location for affordable housing. It would retain its existing Industrial – Airport Compatibility zoning and General Plan designation of Study Area and would not be redesignated as Transitional, or rezoned as Napa Pipe Residential.

♦ The Angwin, Monticello/Atlas Peak, Moskowite Corner, and Spanish Flat sites would retain their existing Affordable Housing Combination District (:AHCD) overlay zoning and would continue to be identified as potential affordable housing sites, as they were in the 2004 Housing Element. These sites could be developed with multi-family housing without further County approvals, provided that affordability standards are met.
2. Impact Analysis

This section describes the potential environmental impacts from the No Project Alternative for each of the environmental factors considered in Chapter 4, above.

a. Agricultural Resources

Under the No Project Alternative, the Napa Pipe housing sites would not be developed with housing. This would not be a significant improvement over development of the proposed sites because development on the Napa Pipe housing sites would not pose any significant agricultural impacts.

Under the No Project Alternative, second housing units would not be permitted on parcels zoned AP, as they would be under the proposed Housing Element. Therefore, impacts associated with secondary units on AP lands would not occur under the No Project Alternative. However, because secondary units under the proposed project are not expected to pose significant impacts, the No Project Alternative would be substantially similar to the proposed project in regards to agricultural impacts.

b. Land Use

Under the No Project Alternative, the Napa Pipe housing sites would not be developed with housing. Therefore, land use impacts associated with development of the Napa Pipe sites would not occur. In addition, land use changes associated with allowing secondary units on AP, CL and CN lands; designating parcels on Monticello Road; and permitting a density bonus on mobile home parks would not occur under the No Project Alternative because these programs would not be implemented. However, land use impacts associated with these programs are considered to be less than significant.

Because this alternative would avoid the significant impacts associated with development of the Napa Pipe sites, the No Project Alternative would be an improvement over the proposed project. However, since the impacts associated with the Napa Pipe sites could be mitigated to a less-than-significant
level, the No Project Alternative would be only a slight improvement over the proposed project.

c. Population, Housing and Employment

Under the No Project Alternative, a total of 686 housing units could be developed, as opposed to the 1,398 housing units that could be developed under the proposed Housing Element Update. The difference between the two is attributable to development on the Napa Pipe site, which would not be developed with housing under the No Project Alternative. In addition, under the No Project Alternative, secondary housing units would not be permitted on AP, CL or CN lands, density bonuses would not be permitted on mobile home parks and the parcels on Monticello Road would not be designated Urban Residential.

At an average household size of 2.54 persons per household, the 686 housing units constructed under the No Project Alternative would increase the county’s population by approximately 1,742 people. According to ABAG 2007 Projections, the population of the unincorporated area in Napa County is projected to increase by 800 persons by 2015. The new population expected by the No Project Alternative exceeds ABAG’s projected population increase by approximately 118 percent. In comparison, the development of the potential housing sites and the implementation of programs and policies of the proposed Housing Element Update would create an unavoidable significant impact by exceeding growth projections by approximately 340 percent.

The No Project Alternative would increase the jobs to housing ratio when compared to the proposed project. To determine the impact on the housing and employment balance, the projected future housing and employment ratio

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2 The 686 housing units expected under the No Project Alternative include 395 housing units on the Angwin, Moskowite Corner and Spanish Flat sites, 231 housing units on the Monticello/Atlas Peak sites and 60 units constructed under the Secondary Unit Production and Farmworker Housing Production programs.

3 California Department of Finance estimate for January, 2008.
for the unincorporated area in Napa County is compared to the existing jobs to housing ratio. Numbers of existing jobs and households were taken from the Napa County 2007 General Plan EIR, which is based on ABAG data for 2005. In 2005, ABAG projected the unincorporated area to have a total of 23,180 jobs and 10,090 households, providing an approximately 2.30 jobs to housing ratio. The proposed project adds 1,398 housing units to the existing 10,235 housing units in 2008, which reduces the ratio to 2.17 when compared to the 25,250 projected jobs in 2015. Under the No Project Alternative, there would only be 686 new housing units, which would increase the jobs to housing ratio to 2.31. Therefore, the No Project Alternative would result in a higher jobs to housing ratio than the proposed project, as well as the existing jobs to housing ratio in 2005 of 2.30. This would be a negative impact, since it would exacerbate unincorporated Napa County’s existing imbalance of insufficient housing for its workers.

The proposed project would exceed ABAG’s growth projections by 340 percent, whereas the No Project Alternative would only exceed growth projections by 118 percent. However, the No Project Alternative would slightly increase the existing 2005 jobs to housing ratio, which would be a significant impact. Since both would exceed ABAG growth projections, but the No Project Alternative has a more negative impact on jobs/housing balance, the No Project Alternative would be slightly worse than the proposed project.

d. Transportation
The No Project Alternative would result in similar impacts to the Deer Park Road/Silverado Trail intersection and the Trancas Street/Monticello Road (SR121)/Silverado Trail (SR121) as would the proposed Housing Element Update. Although the Trancas Street/Monticello Road (SR 121)/Silverado Trail (SR 121) intersection is in the vicinity of the Monticello/Atlas Peak housing sites from the 2004 Housing Element, where a higher level of develop-

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5 ABAG Projections 2007.
opment would locally occur under the No Project Alternative, signalization of this intersection would adequately mitigate the impacts of development under both the proposed project and the No Project Alternative. However, because the No Project Alternative would not include housing development on the Napa Pipe site, it could have fewer impacts than the proposed project on other intersections, particularly in the southern part of the county if industrial uses on the sites create fewer peak period trips. It should be noted that under both the No Project Alternative and the proposed project, a total of seven of the 15 study intersections would operate an unacceptable LOS E or F during the AM peak hour, the PM peak hour, or both. See Chapter 4.4, Section D for a more detailed description of the No Project Alternative.

The No Project Alternative would also have similar negative impacts on transit and other modes of alternative transportation and traffic safety, since development would still be allowed occur on the rural housing sites in Angwin, Moskowite Corner and Spanish Flat. Neither the No Project Alternative nor the proposed project would have a significant impact on parking.

e. Biological Resources
Under the No Project Alternative, the Napa Pipe housing sites would not be developed with housing. Therefore, biological resource impacts associated with development of the Napa Pipe sites would not occur unless alternate industrial uses are developed on the site. In addition, secondary units on AP, CL and CN parcels and increased densities on Monticello Road and in mobile home parks would not be permitted. Therefore, biological resource impacts associated with these developments would not occur under the No Project Alternative. However, these housing developments are not expected to result in significant impacts to biological resources because they would be built on lands that have already been disturbed by existing development. Furthermore, under both the proposed project and the No Project Alternative, compliance with applicable regulations and policies would reduce potential impacts on biological resources.
Because this alternative would avoid the significant impacts associated with development of the Napa Pipe sites, the No Project Alternative would be an improvement over the proposed project. However, since the impacts associated with the Napa Pipe sites could be mitigated to a less-than-significant level, the No Project Alternative would be only a slight improvement over the proposed project.

f. Fisheries
Under the No Project Alternative, the Napa Pipe housing sites would not be developed with housing. Therefore, impacts to fish species associated with development of the Napa Pipe sites would not occur. In addition, secondary units on AP, CL and CN parcels and increased densities on Monticello Road and in mobile home parks would not be permitted. Therefore, fisheries impacts associated with these developments would not occur under the No Project Alternative. However, these housing developments are not expected to result in significant impacts to fisheries because they would be built on lands that have already been disturbed by existing development. Furthermore, under both the proposed project and the No Project Alternative, compliance with applicable regulations and policies will be required to reduce potential impacts on biological resources. Thus, the No Project Alternative would be substantially similar to the proposed project in terms of biological resource impacts.

g. Noise
Under the No Project Alternative, housing would be developed on the Angwin and Moskowite Corner sites and residents would be exposed to similar noise impacts from roadways and aircraft. In addition, housing would be developed on the Monticello/Atlas Peak sites and residents would be exposed to noise impacts from the Napa County Fire Station at 1820 Monticello Road, although such impacts could be mitigated. The Napa Pipe sites would not be developed with housing, so the impact related to noise and vibration on the Napa Pipe sites would not occur. However, this impact could be reduced to a less-than-significant level through the use of sound-rated building construction.
Overall, the No Project Alternative’s noise impacts would be substantially similar to the proposed Housing Element Update.

h. Air Quality
Population growth leads to increases in air pollution and greenhouse gas emissions. As described in the Population, Housing and Employment section, above, the new population expected by the No Project Alternative exceeds ABAG’s projected population increase by approximately 118 percent. In comparison, the development under the proposed Housing Element would exceed growth projections by approximately 340 percent. Thus, the No Project Alternative would have fewer air quality impacts than would be expected with future development under the proposed Housing Element as long as the Napa Pipe sites are not redeveloped for industrial use. The No Project Alternative would not eliminate the significant and unavoidable air quality impacts of the proposed Housing Element.

i. Human Health and Risk of Upset
Under the No Project Alternative, the Napa Pipe housing sites would not be developed with housing. Therefore, human health impacts and risks of upset associated with development of the Napa Pipe sites would not occur. This represents an improvement over the proposed project, under which significant impacts are expected in relation to contamination on the Napa Pipe housing sites. However, such impacts can be mitigated to a less-than-significant level.

In addition, under the No Project Alternative secondary units on AP, CL and CN parcels and increased densities on Monticello Road and in mobile home parks would not be permitted. This represents an improvement over the proposed project, under which significant impacts in relation to wildland fire risks are expected as a result of new development in rural areas of the county. However, the No Project Alternative would have identical impacts in terms of developing housing in areas of wildland fire risk in Angwin, Moskowite Corner and Spanish Flat.
Overall, in relation to impacts on human health and risk of upset, the No Project Alternative would represent an improvement, but not a substantial improvement, over the proposed project.

j. Geology, Soils and Mineral Resources
Under the No Project Alternative, impacts associated with exposure of people and structures to seismic hazards on the Napa Pipe sites would not occur. In addition, under the No Project Alternative secondary units on AP, CL and CN parcels and increased densities on Monticello Road and in mobile home parks would not be permitted. However, under both the proposed project and the No Project Alternative, people, structures and/or property would be exposed to seismic hazards on the Angwin, Moskowite Corner and Spanish Flat sites. The No Project Alternative would be expected to require similar compliance with applicable regulations and safe building design practices. In relation to geology and soils, the No Project Alternative would be substantially similar to the proposed project.

k. Hydrology and Water Quality
Hydrology and water quality impacts associated with programs and policies of the No Project Alternative would be substantially similar to the impacts of the proposed Housing Element Update. Because the No Project Alternative would allow development of significantly fewer housing units, secondary units on AP, CL and CN parcels and increased densities on Monticello Road and in mobile home parks would not be permitted, the No Project Alternative would have fewer impacts from construction runoff and impervious surfaces. However, under both the No Project Alternative and the proposed project, these impacts would be mitigated by existing County policies and regulations and would be less than significant. In addition, under both the No Project Alternative and the proposed project, there would be significant impacts related to development on the Angwin and Moskowite Corner sites.

Overall, in relation to hydrology and water quality, the No Project Alternative would be substantially similar to the proposed project.
I. Cultural and Paleontological Resources

The No Project Alternative would have identical impacts to cultural resources on the Angwin, Moskowite Corner and Spanish Flat sites as the proposed project. Impacts to cultural resources from the programs and policies of the No Project Alternative would also be expected to be substantially similar to the impacts of the programs and policies of the proposed Housing Element Update. However, under the No Project Alternative, the Napa Pipe housing sites would not be developed with housing. Therefore, cultural resource impacts associated with development of the Napa Pipe sites would not occur unless alternate industrial development were to proceed in the future. Therefore, because significant and unavoidable impacts on the Napa Pipe sites would be avoided under the No Project Alternative, this alternative would be a substantial improvement over the proposed project.

m. Public Services and Utilities

The No Project Alternative would generate a decreased demand for public services compared to the proposed Housing Element Update, since it would allow less development. This alternative would also eliminate housing development on the Napa Pipe sites, so significant impacts associated with development on the Napa Pipe sites would be avoided, although all impacts could be mitigated to a less-than-significant level.

In addition, under the No Project Alternative, increased densities on Monticello Road would not be permitted. Similar to the Napa Pipe site, development on Monticello Road would require an expansion of water and wastewater services. Although such projects would be subject to federal, State and local regulations and would therefore not be expected to pose significant impacts, the No Project Alternative represents an improvement by avoiding the construction of these facilities. However, because the No Project Alternative would maintain the AHCD zoning overlay on the Monticello/Atlas Peak housing sites from the 2004 Housing Element, development at this site would require a similar expansion of water and sewer services as for the Monticello Road Rural Residential area program. Such an expansion would be subject to
federal, State and local regulations, so it would not be expected to result in significant environmental impacts.

Although new services and facilities constructed on the Napa Pipe could be mitigated to less-than-significant level, these facilities would not be constructed under the No Project Alternative. Thus, the No Project Alternative would be an improvement, but not a substantial improvement, over the proposed project.

n. Visual Resources, Light and Glare
Under the No Project Alternative, no housing would be developed on the Napa Pipe sites. Therefore, potential impact associated with the change in visual character on the Napa Pipe sites would be eliminated in this alternative. In addition, under the No Project Alternative secondary units on AP, CL and CN parcels and increased densities on Monticello Road and in mobile home parks would not be permitted, although housing development under these programs is not expected to result in significant impacts to visual resources because it would be built on lands on which visual resources have already been impacted by existing development.

Because this alternative would avoid the significant impact associated with development of the Napa Pipe sites, the No Project Alternative would be an improvement over the proposed project. However, since the impact associated with the Napa Pipe sites could be mitigated to a less-than-significant level, the No Project Alternative would not be a substantial improvement over the proposed project.

3. Cumulative impacts
Under the No Project Alternative, the Napa Pipe project would not build out, so there would be fewer cumulative impacts than under the proposed project. Specifically, cumulative impacts related to transportation, cultural resources, public services, population, noise and air quality associated with development of Napa Pipe would be reduced unless the sites are redeveloped with new industrial uses. Overall, with respect to cumulative impacts, the
No Project Alternative would be a slight improvement over the proposed project, except for impacts on the County’s jobs-housing balance.

C. Regional Housing Needs Allocation Transfer

This section qualitatively evaluates the potential environmental impacts of the Regional Housing Needs Allocation (RHNA) Transfer Alternative.

1. Principal Characteristics

Under the RHNA Transfer Alternative, Napa County would work with the Cities of Napa and/or American Canyon to create an agreement wherein the County would transfer a substantial portion of its 2007 to 2014 Regional Housing Needs Allocation to one or both of the Cities. Under this alternative, the Napa Pipe sites would not be developed and could be reused for industrial purposes; the remaining housing sites, including Angwin, Moskowite Corner and Spanish Flat, would still be developed as proposed in the Housing Element Update.

It is assumed that under this Alternative, agreements would be executed whereby 450 housing units from the County’s RHNA would be transferred to the Cities of Napa and/or American Canyon. If these 450 housing units were distributed in proportion to Napa and American Canyon’s populations, 79 units would be transferred to the City of American Canyon and 371 units would be transferred to the City of Napa. Units built in the cities would be constructed at a gradual pace on residential and mixed-use sites throughout the cities; specific locations are unknown.

Under the proposed project, a total of 1,398 housing units could be built in the unincorporated portion of the county. The proposed programs and policies account for 153 of these housing units; the remaining 1,245 housing units represent the realistic unit capacity of the four housing sites. Under the RHNA Transfer Alternative, 79 units would be built in the City of Napa, 371 units would be built in the City of American Canyon, and 548 units would be built in unincorporated areas of Napa County. The proposed pro-
grams and policies account for 153 of these unincorporated housing units; the remaining 395 unincorporated housing units represent the realistic unit capacity of the Angwin, Moskowite Corner and Spanish Flat housing sites.

2. Impact Analysis
This section describes the potential environmental impacts from the RHNA Transfer Alternative for each of the environmental factors considered in Chapter 4, above.

a. Agricultural Resources
Under the RHNA Transfer Alternative, the Napa Pipe housing sites would not be developed, so only 12 of the 14 sites designated in the proposed Housing Element Update would be developed with housing. This would not be a significant improvement over development of the proposed sites because development on the housing sites would not pose significant impacts in regards to conversion of farmlands of concern under CEQA, decreases in agriculturally-designated lands or conflicts with existing agricultural uses or Williamson Act contracts.

Under this alternative, 450 housing units would be constructed in the cities of American Canyon and Napa. These new housing units would primarily be located on infill parcels and are not expected to result in significant impacts to agricultural resources. City of American Canyon and City of Napa General Plan policies protect agricultural uses from conflicts with urban land uses and promote the preservation of agricultural land uses. In addition, site-specific CEQA review would be required for housing sites in the Cities of Napa and American Canyon to reduce potential impacts associated with agricultural resources.

Thus in relation to agriculture, the RHNA Transfer Alternative would be substantially similar to the proposed project.
b. Land Use
It is unknown where housing units transferred to the Cities of Napa and American Canyon under the RHNA Transfer Alternative would be located, however there may be some potential for land use impacts. However, land use incompatibilities would be resolved through local development permitting requirements in the Cities of Napa and American Canyon. Therefore, at the time that housing units are built, it is not expected that there would be any land use conflicts.

Under the RHNA Transfer Alternative, the Napa Pipe sites would not be developed. Under the proposed project, land use impacts on Napa Pipe sites were found to be significant, although they can be mitigated to a less-than-significant level. Therefore, the RHNA Transfer Alternative would be an improvement, but not a substantial improvement, over the proposed project.

c. Population, Housing and Employment
At an average household size of 2.54 persons per household, the 548 housing units constructed in unincorporated Napa County under the RHNA Transfer Alternative would increase the county’s population by 1,392 people. According to ABAG 2007 Projections, the population of the unincorporated area in Napa County is projected to increase by 800 persons by 2015. The new population expected by the RHNA transfer would exceed ABAG’s projected population increase by approximately 70 percent.

At an average household size of 2.95 persons per household, the 79 housing units transferred from the County’s RHNA to the City of American Canyon would increase the city’s population by 233 people. According to ABAG’s 2007 Projections, the population of American Canyon is projected to increase from 16,700 in 2010 to 17,900 by 2015, an increase of 1,200 persons. The new residents anticipated by the RHNA transfer would not exceed ABAG’s pro-

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7 City of American Canyon average persons per household, California Department of Finance estimate for January, 2008.
jected population increase for American Canyon even when added to the City’s RHNA allocation of 728 units.

At an average household size of 2.59 persons per household,\(^8\) the 371 housing units transferred from the County’s RHNA to the City of Napa would increase the city’s population by 961 people. According to ABAG’s 2007 Projections, the population of Napa is projected to increase from 79,000 in 2010 to 82,000 by 2015, an increase of 3,000 persons. The new residents anticipated by the RHNA transfer would exceed ABAG’s projected population increase for Napa when added to the City’s RHNA allocation of 2,024 units plus the 82 units previously transferred from the County.

To determine the impact on the unincorporated county’s housing and employment balance, the projected future housing and employment ratio for the unincorporated area in Napa County is compared to the existing jobs to housing ratio. Numbers of existing jobs and households were taken from the Napa County 2007 General Plan EIR, which is based on ABAG data for 2005. In 2005, ABAG projected the unincorporated area to have a total of 23,180 jobs and 10,090 households, providing an approximately 2.30 jobs to housing ratio. The proposed project adds 1,398 housing units to the existing 10,235 housing units in 2008,\(^9\) which reduces the ratio to 2.17 when compared to the 25,250 projected jobs in 2015.\(^10\) Under the RHNA Transfer Alternative, there would only be 548 new housing units, which would increase the jobs to housing ratio to 2.34. Therefore, the No Project Alternative would result in a higher jobs to housing ratio than the proposed project, as well as the existing jobs to housing ratio in 2005 of 2.30.

\(^8\) City of Napa average persons per household, California Department of Finance estimate for January, 2008


\(^10\) ABAG Projections 2007.
To determine the impact on the City of American Canyon’s housing and employment balance, the projected future housing and employment ratio for the City of American Canyon is compared to the existing jobs to housing ratio projected by ABAG for 2005. In 2005, ABAG projected American Canyon to have a total of 2,230 jobs and 4,870 households, providing an approximately 0.5 jobs to housing ratio. The RHNA Transfer Alternative would add 79 housing units to the existing 5,591 housing units in 2008, and negatively impact the jobs housing ratio since there are currently more housing units than jobs.

To determine the impact on the City of Napa’s housing and employment balance, the projected future housing and employment ratio for the City of Napa is compared to the existing jobs to housing ratio projected by ABAG for 2005. In 2005, ABAG projected Napa to have a total of 34,580 jobs and 28,730 households, providing an approximately 1.2 jobs to housing ratio. The RHNA Transfer Alternative would add 371 housing units to the existing 30,094 housing units in 2008, which increases the ratio to 1.3 when compared to the 39,130 projected jobs in 2015. Therefore, the RHNA Transfer Alternative would result in a slightly higher jobs to housing ratio in the City of Napa than the existing jobs to housing ratio in 2005 of 1.2. This would not be a significant change from existing conditions.

Under the RHNA Transfer Alternative, it is expected that the population growth in unincorporated Napa County would be exceeded by approximately 70 percent. In comparison, the development of the potential housing sites and the implementation of the programs and policies of the proposed Housing Element would create unavoidable significant impacts by exceeding

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countywide growth projections by approximately 340 percent. Overall, the RHNA Transfer Alternative would be an improvement, but not a substantial improvement, over the proposed project.

d. Transportation
The RHNA Transfer Alternative would generate fewer vehicle trips than the proposed Housing Element Update, since it would allow less development. In addition, these vehicle trips would be expected to be shorter, since the residents of the new housing units would be located in urbanized areas closer to jobs, schools and services. These two factors would combine to decrease the overall amount of vehicle miles traveled (VMT) in the county, particularly if the Napa Pipe sites do not get redeveloped with more intense industrial uses. However, the RHNA Transfer Alternative would be expected to increase congestion at intersections and on roadways in and around the cities of Napa and American Canyon due to the housing obligations transferred to the cities.

The RHNA Transfer Alternative would not have the same impacts as the proposed project on alternative transportation, since housing units would be located closer to existing transit routes and bicycle and pedestrian facilities. Thus the RHNA Transfer Alternative would be expected to have a positive rather than a negative impact on alternative transportation modes, as well as on traffic safety, since new housing would be located in already urbanized areas. However, the RHNA Transfer Alternative could potentially have greater impacts on parking, since housing sites in Napa and American Canyon may be more constrained and have less capacity to provide all parking on-site.

Overall, the RHNA Transfer Alternative would be worse at some locations in the cities, but better at locations near Napa Pipe.

e. Biological Resources
Under the RHNA Transfer Alternative, fewer housing units would be built in the unincorporated areas of the county, therefore there would be fewer direct and indirect impacts on sensitive habitats.
It is unknown where housing units transferred to the Cities of Napa and American Canyon under the RHNA Transfer Alternative would be located, however, there may be some potential for significant impacts related to biological resources. The City of Napa and its surrounding area contains grasslands, chaparral/scrub, oak woodland, riparian woodland, wetlands and marshes. There are oak woodland, riparian woodland, wetlands, streams and marshes in the American Canyon area that would be subject to potentially significant impacts depending on the location of future housing development.

Under both the proposed project and the RHNA Transfer Alternative, development on the Angwin, Moskowite Corner and Spanish Flat sites has the potential to pose significant impacts to biological resources. Significant impacts are also expected with the development of the Napa Pipe sites, however because the Napa Pipe sites would not be developed under the RHNA Transfer Alternative, this alternative would eliminate these impacts unless some alternate industrial development was implemented.

Under both the proposed project and the RHNA Transfer Alternative, compliance with applicable regulations and policies would reduce potential impacts on biological resources. Overall, the RHNA Transfer Alternative would be substantially similar to the proposed project in terms of biological resource impacts.

f. Fisheries
Under the RHNA Transfer Alternative, although fewer housing units would be constructed in unincorporated areas of Napa County, housing units transferred to the Cities of American Canyon and Napa may be proposed for sites containing special-status fish species or sensitive habitat. However, site-specific CEQA review would be required for housing sites in the Cities of American Canyon and Napa to reduce potential impacts associated with biological resources. Thus, under the RHNA Transfer Alternative, potential impacts to fisheries would be either avoided or mitigated to less-than-significant levels under CEQA review. Similarly, under the proposed project
all impacts associated with fisheries are considered to be either less than significant or significant but mitigable under the proposed project. Thus in relation to fisheries, the RHNA Transfer Alternative would be substantially similar to the proposed project.

g. Noise
Under the RHNA Transfer Alternative, housing would be developed on the Angwin and Moskowite Corner sites and residents would be exposed to similar noise impacts from roadways and aircraft. The Napa Pipe sites would not be developed with housing, so the impact related to noise and vibration on the Napa Pipe sites would not occur. However, this impact could be reduced to a less-than-significant level through the use of sound-rated building construction. Specific locations for the units that would be transferred to American Canyon and Napa have not yet been identified, but these cities generally have noise environments that would be expected to experience higher noise levels than those measured in Angwin. It is possible that units could be developed on sites adjacent to major highways, rail lines, or stationary noise sources. If this was the case, impacts could be mitigated through project-specific treatments and sound-rated building construction. Overall, the RHNA Transfer Alternative would have slightly fewer noise impacts than the proposed Housing Element; impacts could be worse at some locations in the cities, but better at locations near Napa Pipe.

h. Air Quality
Population growth leads to increases in air pollution and greenhouse gas emissions. As described in the Population, Housing and Employment section, above, the new population expected by the RHNA Transfer Alternative exceeds ABAG’s projected population increase by approximately 70 percent. In comparison, the development under the proposed Housing Element Update would create an unavoidable significant impact by exceeding growth projections by approximately 340 percent. The RHNA Transfer Alternative therefore represents an improvement over the air quality impacts associated with future growth throughout the county.
Because the RHNA Transfer Alternative will result in housing units being constructed in the Cities of American Canyon and Napa that would otherwise be constructed in unincorporated areas, air quality impacts are expected to worsen in these incorporated cities under this alternative. However, as described in the Transportation section above, vehicle trips would be shorter, which would help to reduce air quality impacts on a countywide level unless industrial job growth at Napa Pipe occurs.

Therefore, the RHNA Transfer Alternative would decrease some impacts associated with development in unincorporated areas, but would also create new impacts for the Cities of American Canyon and Napa. Thus, the RHNA Transfer Alternative would be substantially similar to the proposed project.

i. Human Health and Risk of Upset
Under the RHNA Transfer Alternative, potentially significant impacts associated with exposure to hazardous materials would be eliminated because the Napa Pipe housing sites would not be developed. However, such impacts can be mitigated to a less-than-significant level.

Impacts associated with wildland fire risks would be reduced under the RHNA Transfer Alternative. Although the risks associated with housing development at the Angwin, Moskowite Corner and Spanish Flat sites would remain, the transfer of RHNA units to the Cities of Napa and American Canyon would reduce wildland fire risks because urban areas generally contain less vegetation and are therefore less subject to fire risks. Under the proposed project, significant impacts pertaining to wildland fire risks are expected on the Angwin, Moskowite Corner and Spanish Flat sites, as well as under the programs and policies of the proposed Housing Element.

Under both the proposed project and the RHNA Transfer Alternative, development would be required to comply with all federal, State and local regulations and procedures that would reduce potential impacts associated with human health and hazards. Under the RHNA Transfer Alternative, potential
human health and risk of upset impacts would be reduced but would not be completely eliminated. Thus, the RHNA Transfer Alternative is an improvement, but not a substantial improvement, over the proposed project.

j. Geology, Soils and Mineral Resources
Under the RHNA Transfer Alternative, housing units built in the Cities of Napa and American Canyon would be subject to similar geologic and seismic risks as those built in the unincorporated County under the proposed project. Under both the proposed project and the RHNA Transfer Alternative, reducing exposure to seismic and geologic risks would largely rely on compliance with applicable regulations, site-specific CEQA review and implementation of safe building design practices. Thus, in relation to geology and soils, the RHNA Transfer Alternative would be substantially similar to the proposed project.

k. Hydrology and Water Quality
Under the RHNA Transfer Alternative, only 12 of the 14 potential housing sites would be developed, and fewer overall units would be constructed, so impacts to hydrology and water quality would be slightly reduced. However, it is unknown where housing units constructed in the Cities of Napa and American Canyon would be located, and therefore some level of impacts to hydrologic resources can be expected. Nevertheless, under both the proposed project and the RHNA Transfer Alternative, reducing hydrology and water quality impacts would largely rely on compliance with applicable regulations and site-specific CEQA review. Thus, in relation to hydrology and water quality, the RHNA Transfer Alternative would be substantially similar to the proposed project.

l. Cultural and Paleontological Resources
Under the RHNA Transfer Alternative, the Napa Pipe housing sites would not be developed with housing. Therefore, potential significant and significant and unavoidable impacts on the Napa Pipe sites would be eliminated under this alternative unless an alternate industrial reuse scenario is implemented in the future. However, significant impacts associated with housing
development on the Angwin, Moskowite Corner and Spanish Flat sites would remain. In addition, it is possible that housing development sites in the Cities of Napa and American Canyon could contain known or unknown archeological or historical resources. Site-specific CEQA review would be required for housing sites in the Cities of Napa and American Canyon to reduce potential impacts associated with cultural and paleontological resources. The RHNA Transfer Alternative is considered to be an improvement, but not a substantial improvement, over the proposed project in terms of impacts on cultural and paleontological resources.

m. Public Services and Utilities
The RHNA Transfer Alternative would generate a decreased demand for public services than the proposed Housing Element Update, since it would allow less development. In addition, significant impacts associated with development on the Napa Pipe sites would be avoided, although such impacts can be mitigated to a less-than-significant level. Under this alternative, more housing would be located within urban areas with existing municipal services due to the transfer of units to the Cities of American Canyon and Napa. Water supply for these municipal services relies on surface water, and supply may not be sufficient to serve the new development. On the other hand, under the proposed project, development on the Napa Pipe sites would primarily rely on groundwater, for which there is adequate supply. Therefore, the RHNA Transfer Alternative may require additional infrastructure to serve units within the cities that would not be required under the proposed project. However, it is expected that impacts from such facilities could be mitigated through compliance with federal, State and local regulations.

Because the proposed project and the RHNA Transfer Alternative both pose mitigable public service impacts, they would be substantially similar.

n. Visual Resources, Light and Glare
Under the RHNA Transfer Alternative, no housing would be developed on the Napa Pipe sites. Therefore, the potential impact associated with the change in visual character on the Napa Pipe sites would be eliminated in this
alternative. In addition, the transfer of units from unincorporated land to the Cities of American Canyon and Napa would likely reduce impacts associated with scenic vistas, visual character and light and glare. Since the cities are already mostly urbanized, it is likely that new housing units built in these cities would not degrade existing visual conditions or create sources of light and glare where they do not already exist. However, the RHNA Transfer Alternative would not reduce the significant impacts expected associated with the future development of the Angwin, Moskowite Corner or Spanish Flat housing sites. Therefore, the RHNA Transfer Alternative would an improvement, but not a substantial improvement, over the proposed project.

3. Cumulative Impacts
Under the RHNA Transfer Alternative, the Napa Pipe project would not build out with housing, so there would be fewer contributions to cumulative impacts than under the proposed project, including cumulative impacts related to transportation, cultural resources and public services associated with development of Napa Pipe. In addition, there would significant and unavoidable cumulative population, noise and air quality impacts under the proposed project, and full buildout of the Napa Pipe project poses a significant contribution to each of those impacts. Therefore, although the cumulative impacts related to population under the RHNA Transfer Alternative would still be significant, they would be reduced from the proposed project unless/until the Napa Pipe site is redeveloped with more intensive industrial uses than exist today.

However, under the RHNA Transfer Alternative, there would be population growth within the cities of American Canyon and Napa, which could potentially be more than anticipated by current General Plans and ABAG projections. This population growth would also likely cause additional impacts on transportation, noise, air quality and public services.

Overall, with respect to cumulative impacts, the RHNA Transfer Alternative would be substantially similar to the proposed project.
D. Environmentally-Superior Alternative

CEQA guidelines require that the environmentally-superior alternative be designated. If the alternative with the least environmental impact is the No Project Alternative, then this document must also designate the next most environmentally alternative.

Based on the analysis above, the environmentally-superior alternative would be the No Project Alternative Alternative. The next most environmentally-preferable alternative would be the RHNA Transfer Alternative.
This chapter provides an overview of the impacts of the proposed Housing Element Update based on the technical analyses presented in Chapters 4 and 5. The topics covered in this chapter include growth inducement, unavoidable significant impacts, significant irreversible changes and impacts found not to be significant. A more detailed analysis of the effects the proposed Housing Element Update would have on the environment is provided in Chapter 4 of this document. Project alternatives are discussed in Chapter 5.

A. Growth Inducement

Section 15126.2(d) of the CEQA Guidelines requires that an EIR discuss the ways in which a proposed project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment.

Typical growth inducements might be the extension of urban services or transportation infrastructure to a previously unserved or under-served area, or the removal of major barriers to development. This section evaluates the proposed Housing Element’s potential to create such growth inducements.

Growth in Napa County is constrained by the provisions of Measure J (now Measure P) and the County’s Housing Allocation Program (Measure A). Within this framework, the proposed Housing Element includes a number of programs and policies to encourage the development of housing, and identifies specific sites where this housing development would occur. It would result in an increase in the number of housing units in Napa County, and a corresponding increase in the county’s population. The direct environmental effects of this growth are addressed in Sections 4.1 through 4.14 of this Draft EIR.

While implementation of the Housing Element would allow growth, it is not anticipated to directly induce growth. However, expansions of infrastructure needed to serve the development proposed under the Housing Element Update could indirectly induce growth. In addition, rezoning the Napa Pipe
The proposed Housing Element is intended to provide additional housing for moderate- and lower-income households, for which there is a great and recognized need in Napa County. Because of the cost of housing in Napa County, many workers in the moderate- and lower-income brackets currently commute into the county on a daily basis. It is expected that some of the new housing developed under the proposed Housing Element would be utilized by people who already work in Napa County. Thus, growth under the proposed project could have positive environmental impacts by reducing the need of workers to commute into the county, thereby reducing associated traffic and energy consumption impacts.

B. Unavoidable Significant Impacts

Section 15126.2(b) of the CEQA Guidelines requires that an EIR describe any significant impacts that cannot be avoided, even with the implementation of feasible mitigation measures. This section lists the impacts for the proposed Housing Element and its associated zoning amendments that were found to be significant and unavoidable. More information on these impacts is found in Chapter 4 of this Draft EIR.

- **POP-1:** The housing programs and sites included in the proposed Housing Element could generate units potentially in excess of ABAG population projection for 2015. Because there are no feasible measures to mitigate this impact to a less-than-significant level, this impact is significant and unavoidable.

- **POP-2:** The proposed Housing Element would contribute to the General Plan’s significant and unavoidable cumulative impact resulting from exceeding ABAG’s regional population projections and the County’s 1 percent population growth standard derived from the Growth Management System. Because there are no feasible measures to mitigate this impact to
a less-than-significant level, the proposed project contributes to a significant and unavoidable cumulative impact.

♦ **TRAF-11**: Operations at the signalized intersection of 1st Street/Soscol Avenue (Intersection 10) would degrade from an acceptable LOS B to an unacceptable LOS F during the PM peak traffic hour under Cumulative (Year 2030) conditions.

♦ **TRAF-14**: The proposed Housing Element would contribute significant levels of vehicular traffic to roadway segments identified in the General Plan EIR as operating at an unacceptable level of service with cumulative traffic in Year 2030. In addition, development on the Napa Pipe site may significantly increase delays and/or contribute to significant cumulative delays at intersections not selected for analysis in this EIR.

♦ **NOISE-4**: The proposed Housing Element Update would contribute to a cumulatively considerable increase in traffic noise along roadways in the county.

♦ **AIR-1**: The proposed Housing Element Update would conflict with regional clean air planning efforts, since population and vehicle miles traveled would increase at a greater rate than projections used for air quality planning. The projected growth could lead to an increase in the region’s VMT, contributing to the on-going air quality issues in the Bay Area. In addition, the proposed Housing Element Update would contribute to a cumulatively significant impact related to conflicts with regional clean air planning efforts because population and vehicle miles traveled will be greater than projections used for air quality planning under the General Plan.

♦ **AIR-2**: Implementation of the proposed Housing Element Update would contribute to an increase in GHG emissions from vehicle transportation and building energy use, contributing to increases in atmospheric GHG concentrations that lead to global warming. The proposed project would also contribute to a cumulatively significant impact under the General Plan related to GHG emissions.
♦ **GEO-2:** The Housing Element would increase the county’s population and the number of structures with a potential for seismic-related risk. Thus the proposed Housing Element would have a cumulatively considerable impact related to seismic-related ground shaking and ground failure.

♦ **CUL-5:** The construction of housing on the Napa Pipe sites would result in the demolition of the Basalt Shipyard, a significant historic architectural resource, which would contribute to a cumulatively significant impact from the General Plan. With Mitigation Measure CUL-5, this impact would be reduced, but not avoided, and would remain *significant and unavoidable*.

♦ **VIS-1:** Moskowite Corner Sites A and B are part of scenic vistas and visible from County-designated scenic routes. Due to the flat topography, new development could not be screened without blocking the scenic vista or viewshed of Highway 128. No feasible mitigation measure was identified to reduce this impact. Therefore, the impact of developing on Moskowite Corner Sites A and B is *significant and unavoidable*.

### C. Significant Irreversible Changes

Section 15126.2(c) of the CEQA Guidelines requires an EIR to discuss the extent to which a proposed project will commit nonrenewable resources to uses that future generations will probably be unable to reverse. There are three categories of irreversible changes that are to be considered under CEQA:

1. **Changes in Land Use that Commit Future Generations**
   
   Many of the housing units developed as a result of the programs and policies in the proposed Housing Element would be located on sites that are currently partially or completely undeveloped. Once these sites were developed, it would be economically unfeasible to restore them to their pre-development conditions. Future generations would be committed to this change in land use.
2. **Irreversible Damage from Environmental Accidents**

The new housing units that would be developed as a result of the proposed Housing Element would not involve the use, generation or transport of hazardous materials. Therefore, the proposed Housing Element would not pose a risk of irreversible damage from environmental accidents.

3. **Large Commitment of Nonrenewable Resources**

The assessment of nonrenewable resource consumption includes increased energy consumption, conservation of agricultural lands and loss of access to mining resources. As discussed in Section 7.2 of the General Plan Draft EIR, future development in the county would utilize resources such as oil, gasoline, lumber, sand and gravel, asphalt, water and steel. New housing would also increase demands on public services and utilities, as discussed in detail in Section 4.13 of this Draft EIR. The proposed Housing Element would also result in significant unavoidable impacts to air quality, including emissions of greenhouse gases, as discussed in Section 4.8.

New housing would require additional utility service, as well as resources for construction. However, the creation of new housing in Napa County is intended to address the County’s current jobs/housing imbalance by providing housing for people who currently work in the county but live elsewhere. Thus, the construction of this housing is expected to reduce the fuel consumption of workers by shortening commute distances.

Napa County has had measures in place to protect agricultural land since the late 1960s. As discussed in detail in Section 4.1, none of the land proposed for affordable housing on the 14 identified housing sites is designated for agricultural uses in the Napa County General Plan, no new housing proposed in response to programs and policies in the proposed Housing Element could be developed on land designated for agricultural uses in the General Plan without a vote of the people and existing agricultural uses are protected from the
encroachment of new residential uses by the County’s Right to Farm Ordinance and County Code requirements regarding setbacks. Thus, new housing developed to implement the proposed Housing Element would not result in any significant impacts to agricultural resources.

Syar Quarry is currently the only active, significant mining operation in Napa County.\(^2\) There are no known mineral resources located at the specific sites where new housing has been proposed. All other residential units constructed as a result of programs and policies contained in the proposed Housing Element would be constructed on sites that are already developed with existing residential, commercial or agricultural (in the case of farmworker housing) uses, and would be subject to the legally-required level of environmental review to determine potential environmental impacts related to mineral resources.

Overall, the implementation of the proposed Housing Element and its associated zoning amendments would not require a significant commitment of non-renewable resources.

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APPENDIX A

NAPA PIPE MODEL VALIDATION
6. CUMULATIVE CONDITIONS

This chapter discusses future year 2030 conditions with traffic added to the transportation system associated with the proposed project and other reasonably-foreseeable development projects. Project buildout is expected by 2019. Therefore, the project was expected to be fully constructed and occupied for the cumulative analysis. Cumulative impacts to which the project contributes substantial traffic volumes are identified, and mitigations are recommended, where feasible, to reduce cumulative impacts to less than significant levels.

FUTURE ROADWAY IMPROVEMENTS

Fehr & Peers analyzed Cumulative (Year 2030) conditions for two different sets of roadway assumptions:

1. Year 2030 land use projections including fully programmed and funded roadway improvements in Napa County. These improvements are shown on Figure 12.
2. Year 2030 land use projections with roadway improvements identified in the Regional Transportation Plan (RTP) that are likely to be constructed by Year 2030 but are not yet fully funded. These improvements are shown on Figure 13.

By analyzing Cumulative conditions traffic operations under these two scenarios, a full understanding of what impacts would occur if certain roadway improvements were not implemented (i.e., those that are not fully-funded), and also how traffic patterns would be affected if other projects that are expected to occur but do not yet have full funding identified were implemented.

TRAFFIC FORECASTS

Cumulative (Year 2030) traffic volumes are based on output from the Napa/Solano County Travel Demand Forecasting (TDF) Model and previously-prepared transportation impact analyses. This section describes the process by which the model was reviewed and refined prior to being used to develop forecasts and the process by which those forecasts were developed.

Model Validation

The Napa/Solano County TDF model was developed for purposes of forecasting regional traffic within Napa and Solano Counties. The Napa/Solano County TDF model was certified by the Metropolitan Transportation Commission (MTC) as being valid for forecasting regional traffic volumes. However, being valid on a countywide level does not guarantee that a TDF model is appropriate for producing locally-validated forecasts. Thus, Fehr & Peers conducted a detailed review of the Napa/Solano County TDF model to determine whether it is able to produce locally-valid traffic forecasts within the study area. This is a more rigorous standard for the model, as it requires more accuracy and detail within a smaller area.

\[\text{The study area for purposes of traffic forecasting for the Napa Pipe project is generally bounded to the north by Trancas Street in Napa and SR 37 in Vallejo.}\]
Construct second NBLT lane at 3rd St./Soscol Ave. intersection.
Construct 1st Street overcrossing at SR 29. 1st Street bridge widened to 4 lanes

Signalize Imola Avenue/SR 29 ramp intersections

Construct flyover ramp at the SR 29/SR 12/SR 121 intersection

Extend Gasser Drive to Silverado Trail

Extend Devlin Road to Green Island Road

Extend Newell Drive to Green Island Road

Widening of SR 29 to 6 lanes south of Airport Boulevard

Widen Jameson Canyon Road to 4 lanes

Construct SR 12/Airport Boulevard interchange

PLANNED (NOT FUNDED) CUMULATIVE (YEAR 2030) ROADWAY IMPROVEMENTS

FIGURE 13
The most critical static measurement of the accuracy of any traffic model is the degree to which it can approximate actual traffic counts in the base year. Caltrans has established certain trip assignment guidelines for models to be deemed acceptable for forecasting future year traffic. This section describes the model performance in comparison to the standards discussed in *Travel Forecasting Guidelines* (California Department of Transportation, November 1992). The validity of the Napa/Solano County TDF model was tested for AM and PM peak hour conditions.

The model consists of a Base model, representing year 2000 conditions, and a Future model, representing year 2030 conditions.

Fehr & Peers performed a detailed review of the model's roadway network coding to ensure that it accurately reflected year 2000 conditions. Additional refinements were made to the model roadway network, consisting primarily of adding smaller, local streets to the model in the area around the project site, generally including all streets between (and including) Syar Industrial Way, SR 221 (Napa-Vallejo Highway), Soscol Ferry Road, and the Napa River. This was done to ensure that project-related traffic was properly loaded onto the roadway network, and that an accurate representation of the immediate project area roadway network was included. The network detail was added to the AM and PM peak hour models.

As noted above, although the original Base model performs acceptably as a regional tool, other calibration measures were taken to improve the model's performance within the study area. The original 2000 Base model tended to over-predict traffic volumes along the SR 29 corridor, a primary commute route to major employment centers in the Bay Area. One likely explanation for the model's over-prediction of peak hour traffic along SR 29 is that it is not sensitive to the time of day people must leave their homes in order to reach their workplace at typical start times. In other words, work trips generated in the study area destined for areas such as San Mateo and Santa Clara Counties, for example, would likely leave their homes prior to the peak hour. The Napa-Solano TDF model is not sensitive to this nuance. Although the amount of traffic making such long commutes is relatively small (on the order of 5 percent of all Napa County commute trips), it is substantial enough to account for the model's over-prediction of traffic in the study area. Therefore, Fehr & Peers adjusted the model's trip generation parameters to reduce the amount of peak hour traffic generated on Napa County roads associated with commute trips longer than one hour (since they would generally leave prior to the peak hour). This modification was made to the AM peak hour model only, as the PM peak hour model performed adequately without this adjustment.

Fehr & Peers tested the original and refined 2000 Base for validity against traffic counts collected in the area during year 2000. Overall, the roadway network modifications and trip generation calibration improved the model's performance in the AM and PM peak hours. Once the adjustments were completed, Fehr & Peers tested the model's validity for use in the Napa Pipe project.

**Comparison Techniques**

Traffic model accuracy is usually tested using two comparison techniques:

- The volume-to-count ratio (V/C) is computed by dividing the traffic volume estimated from the model by the actual traffic volume counted on various road segments. The deviation is the difference between the model volume and the count, divided by the count.

- The percent root mean squared error (RMSE) is the square root of the model volume minus the actual count squared, divided by the number of counts. It is a measure similar to standard deviation in that it assesses the accuracy of the entire model.
Validation Guidelines

For a model to be considered accurate and appropriate for use in traffic forecasting, it must replicate actual conditions to within a certain level of accuracy. Since it would be impossible for any model to precisely replicate all counts, validation guidelines have been established by Caltrans and other agencies. Key validation standards for travel models based on the Caltrans guidelines are summarized below.

- At least 75 percent of the roadway links for which counts are available should be within the maximum desirable deviation, which ranges from approximately 15 to 60 percent depending on total volume (the larger the volume, the less deviation is permitted).
- All of the roadway screenlines should be within the maximum desirable deviation, which has a similar range of deviation as the links described above depending on total volume.
- The two-way sum of the volumes on all roadway links for which counts are available should be within 10 percent of the counts.
- The correlation coefficient between the actual ground counts and the estimated traffic volumes should be greater than 88 percent.

Although not stated in the Caltrans standards, an additional validation guideline was applied to the Base year traffic models:

- The RMSE should not exceed 40 percent.

A comparison of the original and refined 2000 Base models showed that the adjustments made to the model to better reflect the roadway network in the immediate vicinity of the project site and to better reflect actual commute patterns in the vicinity of the proposed project improved the model’s ability to accurately predict year 2000 AM and PM peak hour traffic. Tables 11 through 14 present the results of the validation testing and a comparison between the original 2000 Base model and the refined 2000 Base developed for use on this project.

<table>
<thead>
<tr>
<th>Validation Item</th>
<th>Criterion for Acceptance</th>
<th>2000 Base</th>
<th>2000 Refined Base</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Counts</td>
<td>N/A</td>
<td>27</td>
<td>27</td>
</tr>
<tr>
<td>% of Links Within Caltrans Standard Deviations</td>
<td>At Least 75%</td>
<td>26%</td>
<td>46%</td>
</tr>
<tr>
<td>% of Screenlines Within Caltrans Standard Deviations</td>
<td>100%</td>
<td>#N/A</td>
<td>#N/A</td>
</tr>
<tr>
<td>2-way Sum of All Links Counted</td>
<td>Within 10%</td>
<td>+ 42%</td>
<td>-3%</td>
</tr>
<tr>
<td>Correlation Coefficient</td>
<td>Greater than 88%</td>
<td>88%</td>
<td>93%</td>
</tr>
<tr>
<td>RMSE</td>
<td>40% or less</td>
<td>73%</td>
<td>39%</td>
</tr>
</tbody>
</table>

Notes:
1. Criteria in **Bold** indicate where model does not meet criteria.
2. Comparison is between model outputs with Year 2000 traffic counts provided with model at various locations throughout the study area.

### TABLE 12
ORIGINAL AND REFINED 2000 BASE MODEL VALIDATION – BY VOLUME RANGE AM PEAK HOUR

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>100 to 249</td>
<td>0</td>
<td>0</td>
<td>100%</td>
<td>N/A</td>
<td>N/A</td>
<td>116%</td>
<td>N/A</td>
</tr>
<tr>
<td>250 to 499</td>
<td>3</td>
<td>3</td>
<td>50%</td>
<td>-9%</td>
<td>-2%</td>
<td>116%</td>
<td>60%</td>
</tr>
<tr>
<td>500 to 999</td>
<td>7</td>
<td>10</td>
<td>25%</td>
<td>-16%</td>
<td>-27%</td>
<td>43%</td>
<td>39%</td>
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<tr>
<td>1,000 to 1,999</td>
<td>14</td>
<td>16</td>
<td>20%</td>
<td>58%</td>
<td>5%</td>
<td>28%</td>
<td>74%</td>
</tr>
<tr>
<td>2,000 to 3,999</td>
<td>3</td>
<td>3</td>
<td>15%</td>
<td>50%</td>
<td>2%</td>
<td>25%</td>
<td>57%</td>
</tr>
</tbody>
</table>

**Notes:**
1. Criteria in **Bold** indicate where model does not meet criteria.
2. Comparison is between model outputs with Year 2000 traffic counts provided with model


### TABLE 13
ORIGINAL AND REFINED 2000 BASE MODEL VALIDATION – GENERAL STATISTICS PM PEAK HOUR

<table>
<thead>
<tr>
<th>Validation Item</th>
<th>Criterion for Acceptance</th>
<th>2000 Base</th>
<th>2000 Refined Base</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Counts</td>
<td>N/A</td>
<td>29</td>
<td>32</td>
</tr>
<tr>
<td>% of Links Within Caltrans Standard Deviations</td>
<td>At Least 75%</td>
<td>48%</td>
<td>56%</td>
</tr>
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<td>% of Screenlines Within Caltrans Standard Deviations</td>
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<td>#N/A</td>
<td>#N/A</td>
</tr>
<tr>
<td>2-way Sum of All Links Counted</td>
<td>Within 10%</td>
<td>+ 10%</td>
<td>+ 3%</td>
</tr>
<tr>
<td>Correlation Coefficient</td>
<td>Greater than 88%</td>
<td>63%</td>
<td>64%</td>
</tr>
<tr>
<td>RMSE</td>
<td>40% or less</td>
<td>57%</td>
<td>51%</td>
</tr>
</tbody>
</table>

**Notes:**
1. Criteria in **Bold** indicate where model does not meet criteria.
2. Comparison is between model outputs with Year 2000 traffic counts provided with model

### TABLE 14

**ORIGINAL AND REFINED 2000 BASE MODEL VALIDATION – BY VOLUME RANGE PM PEAK HOUR**

<table>
<thead>
<tr>
<th></th>
<th></th>
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<td></td>
<td></td>
</tr>
<tr>
<td>100 to 249</td>
<td>0</td>
<td>0</td>
<td>100%</td>
<td>N/A</td>
<td>N/A</td>
<td>116%</td>
</tr>
<tr>
<td>250 to 499</td>
<td>0</td>
<td>0</td>
<td>50%</td>
<td>N/A</td>
<td>N/A</td>
<td>116%</td>
</tr>
<tr>
<td>500 to 999</td>
<td>10</td>
<td>10</td>
<td>25%</td>
<td>12%</td>
<td>11%</td>
<td>43%</td>
</tr>
<tr>
<td>1,000 to 1,999</td>
<td>16</td>
<td>19</td>
<td>20%</td>
<td>12%</td>
<td>1%</td>
<td>28%</td>
</tr>
<tr>
<td>2,000 to 3,999</td>
<td>3</td>
<td>3</td>
<td>15%</td>
<td>5%</td>
<td>3%</td>
<td>25%</td>
</tr>
</tbody>
</table>

**Notes:**

1. Criteria in **Bold** indicate where model does not meet criteria.
2. Comparison is between model outputs with Year 2000 traffic counts provided with model.

**Source:** Fehr & Peers, 2007.

As shown in Tables 11 through 14, although the adjustments did improve the model’s performance substantially, the model did not meet the static validation criteria for the AM or PM peak hour.

There are a number of reasons why it is difficult for this project study area model to meet all the validation standards shown above. First, substantial fluctuations in seasonal employment and tourism make it difficult to create a single model that is appropriate for all major roadways in Napa County, because there is no single “typical” set of base land use/population/employment data to enter into the model, just as there is no single “typical” set of traffic conditions to compare against the model output. Additionally, the validation criteria described above were developed for application to large areas with many study locations (i.e., regional and sub-regional models with hundreds of count locations, rather than project study areas consisting of approximately 30 evaluation locations). Application of these same standards to small-area models makes them substantially more rigorous and difficult to achieve.

**Model Validation Conclusions**

The adjustments made to the network and other parameters of the study area model add valuable detail that will allow for more accurate forecasts in the study area. The refined model performs substantially better on measures of model validation in the AM peak hour than the original base model, and somewhat better in the PM peak hour. In both peak hours, the refined model performs substantially better in matching the counts on the higher-volume roadway links, which are the roadways of most interest in future traffic studies. Because the model refinements have led to improvements in model performance, the refined model was used to generate forecasts for the Napa Pipe project.
Traffic Forecasts

Traffic forecasts were developed for the two cumulative scenarios described at the beginning of this chapter using the Future 2030 model, adjusted to include the refinements described above. Year 2030 land use projections were consistent with the County 2030 General Plan forecasts. The City of Napa provided land use refinements within the City of Napa to be consistent with the City of Napa General Plan land use assumptions. Intersection turning movement forecasts were developed from the model projections using a procedure known as “the difference method,” which applies the difference between base year turning movement volumes and base year model volumes to future year model volumes to obtain future year turning movement volumes.

It should also be noted that the “base year” turning movement volumes were collected in year 2007, so comparing them directly to the year 2000 refined Base model output would not be appropriate. Instead, they were compared to an “interim base year” model which adjusted base year land use data using straight-line interpolation between the year 2000 and year 2030 data to estimate year 2007 data. This was the basis for applying the difference method.

The resulting year 2030 cumulative conditions turning movement forecasts were then compared to previous studies in the area, including the Gasser Drive Master Plan EIR and the Napa Valley College Master Plan EIR. Traffic volumes used in those studies used a different forecasting model developed by the City of Napa for forecasting traffic at City intersections. Comparison between volumes used on those recent studies and the volumes developed for this study using the Napa/Solano County TDF model revealed that the cumulative volumes from those studies were higher than those produced by the County TDF model. Therefore, for intersections in the City of Napa were previously-forecasted volumes were higher, this study used the higher volumes.

The resulting cumulative conditions traffic volumes are depicted in Figures 14 and 15.

INTERSECTION OPERATIONS

Cumulative conditions intersection LOS was calculated at each study intersection for the weekday AM and PM peak hour (see Appendix E for detailed level of service calculations). Intersection LOS was determined first for Cumulative conditions including only funded roadway improvements, then for Cumulative conditions including both funded and unfunded (but planned) roadway improvements. Table 15 details the resulting LOS and corresponding delay at each study intersection.

As shown in the table, intersections forecasted to operate unacceptably during the weekday peak hours, under both cumulative scenarios (except where noted) include:

- Lincoln Avenue / Soscol Avenue (PM Peak Hour)
- First Street / Soscol Avenue (AM and PM Peak Hour)
- First Street / Silverado Trail (PM Peak Hour)
- Third Street / Soscol Avenue (PM Peak Hour; AM Peak Hour significantly impacted under the planned network only)
- Third Street / Silverado Trail (SR 121) / East Avenue / Coombsville Road (AM and PM Peak Hours)
APPENDIX B

GENERAL PLAN EIR ROADWAY STUDY SEGMENTS
### 4.4 TRANSPORTATION

<table>
<thead>
<tr>
<th>Roadway</th>
<th>Segment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) American Canyon Road</td>
<td>I-80 to Flosden Road</td>
</tr>
<tr>
<td>2) Chiles Pope Valley Road</td>
<td>Pope Canyon Road to Lower Chiles Valley Road</td>
</tr>
<tr>
<td>3) Deer Park Road</td>
<td>Sanitarium Rd (North) to Silverado Trail</td>
</tr>
<tr>
<td>4) Deer Park Road</td>
<td>Silverado Trail to St. Helena Highway (SR 29/128)</td>
</tr>
<tr>
<td>5) Flosden Road</td>
<td>American Canyon Road to Napa/Solano County Line</td>
</tr>
<tr>
<td>6) Howell Mountain Road</td>
<td>Pope Valley Road to North White Cottage Road</td>
</tr>
<tr>
<td>7) Napa Vallejo Hwy</td>
<td>Kaiser Road to Highway 29 (SR 29/12)</td>
</tr>
<tr>
<td>8) Oak Knoll Avenue</td>
<td>Big Ranch Road to Highway 29</td>
</tr>
<tr>
<td>9) Oakville Cross Road</td>
<td>Napa River to Highway 29</td>
</tr>
<tr>
<td>10) Old Sonoma Road</td>
<td>Buhman Avenue to Carneros Highway (SR 121/12)</td>
</tr>
<tr>
<td>11) Petrified Forest Road</td>
<td>Foothill Boulevard (SR 128) to Franz Valley School Road</td>
</tr>
<tr>
<td>12) Pope Canyon Road</td>
<td>Berryessa-Knoxville Road to Chiles-Pope Valley Road</td>
</tr>
<tr>
<td>13) Silverado Trail</td>
<td>Oak Knoll Avenue to Hardman Avenue</td>
</tr>
<tr>
<td>14) Silverado Trail</td>
<td>Sage Canyon Road (SR 128) to Yountville Cross Road</td>
</tr>
<tr>
<td>15) Silverado Trail</td>
<td>Pope Street to Zinfandel Lane</td>
</tr>
<tr>
<td>16) Silverado Trail</td>
<td>Bale Lane to Deer Park Road</td>
</tr>
<tr>
<td>17) Silverado Trail</td>
<td>Calistoga City Limits to Lincoln Avenue (SR 29)</td>
</tr>
<tr>
<td>18) Soscol Avenue</td>
<td>First Street to Silverado Trail</td>
</tr>
<tr>
<td>19) Spring Mountain Road</td>
<td>St. Helena City Limit to Langtry Road</td>
</tr>
<tr>
<td>20) State Route 12/121</td>
<td>Cuttings Wharf Road to Stanley Road</td>
</tr>
<tr>
<td>21) State Route 12</td>
<td>Lynch Road to Kelly Road</td>
</tr>
<tr>
<td>22) State Route 121</td>
<td>Wooden Valley Road to Vichy Avenue</td>
</tr>
<tr>
<td>23) State Route 121</td>
<td>Circle Oaks Drive to Wooden Valley Road</td>
</tr>
<tr>
<td>24) State Route 121</td>
<td>Napa/Sonoma County Line to Old Sonoma Road</td>
</tr>
<tr>
<td>25) State Route 128</td>
<td>Napa/Sonoma County Line to Tubbs Lane</td>
</tr>
<tr>
<td>26) State Route 128</td>
<td>Tubbs Lane to Petrified Forest Road</td>
</tr>
<tr>
<td>27) State Route 128</td>
<td>Petrified Forest Road to Lincoln Avenue (SR 29)</td>
</tr>
<tr>
<td>28) State Route 128</td>
<td>Napa River to St Helena Hwy (SR 29)</td>
</tr>
<tr>
<td>29) State Route 128</td>
<td>Chiles-Pope Valley Road to Silverado Trail</td>
</tr>
<tr>
<td>30) State Route 128</td>
<td>Monticello Road (SR 121) to Berryessa-Knoxville Road</td>
</tr>
<tr>
<td>31) State Route 128</td>
<td>Napa/Yolo County Line to State Route 121</td>
</tr>
<tr>
<td>32) State Route 29</td>
<td>Napa/Lake County Line to Tubbs Lane</td>
</tr>
<tr>
<td>33) State Route 29</td>
<td>Green Island Road to American Canyon Road</td>
</tr>
<tr>
<td>34) State Route 29</td>
<td>California Drive to Oak Knoll Avenue</td>
</tr>
<tr>
<td>35) State Route 29</td>
<td>Oakville Grade to Madison Street</td>
</tr>
<tr>
<td>36) State Route 29</td>
<td>Rutherford Cross Road (SR 128) to Oakville Grade</td>
</tr>
<tr>
<td>37) State Route 29</td>
<td>Chaix Lane to Zinfandel Lane</td>
</tr>
<tr>
<td>38) State Route 29</td>
<td>Lodi Lane to Deer Park Road</td>
</tr>
<tr>
<td>39) State Route 29</td>
<td>Kelly Road to Jamieson Canyon Road (SR 12)</td>
</tr>
<tr>
<td>40) State Route 29</td>
<td>Napa-Vallejo Hwy (SR 221) to Kelly Road</td>
</tr>
<tr>
<td>41) State Route 29</td>
<td>Napa-Vallejo Hwy (SR 221) to Carneros Hwy (SR 121/12)</td>
</tr>
<tr>
<td>42) State Route 29</td>
<td>Imola Avenue (SR 121) to Carneros Hwy (SR 121/12)</td>
</tr>
<tr>
<td>43) Tubbs Lane</td>
<td>Highway 29 to Highway 128</td>
</tr>
<tr>
<td>44) Wooden Valley Road</td>
<td>Monticello Road (SR 121) to Napa/Solano Co Line</td>
</tr>
<tr>
<td>45) Yountville Cross Road</td>
<td>Silverado Trail to Yountville town Limits</td>
</tr>
<tr>
<td>46) Zinfandel Lane</td>
<td>Silverado Trail to St Helena Hwy (SR 29 &amp; 128)</td>
</tr>
</tbody>
</table>
### Table 4.4-13
Peak Hour –Volume to Capacity (v/c) Ratio and Level of Service for 2030 without Proposed General Plan Update Roadway Improvements

<table>
<thead>
<tr>
<th>Segment Number</th>
<th>Direction A-B or B-A</th>
<th>Road Name</th>
<th>Segment Descriptions</th>
<th>Peak Hour V/C Ratio</th>
<th>Level Of Service</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Segment Limit North / East</td>
<td>Segment Limit South / West</td>
<td>Existing PM</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Alt A PM</td>
</tr>
<tr>
<td>1</td>
<td>NB/EB</td>
<td>AMERICAN CANYON ROAD</td>
<td>I-80</td>
<td>Flosden Road</td>
<td>0.80</td>
</tr>
<tr>
<td>2</td>
<td>SB/WB</td>
<td>AMERICAN CANYON ROAD</td>
<td>I-80</td>
<td>Flosden Road</td>
<td>0.80</td>
</tr>
<tr>
<td>3</td>
<td>NB/EB</td>
<td>CHILES POPE VALLEY RD</td>
<td>Pope Canyon Road</td>
<td>Lower Chiles Valley Road</td>
<td>0.08</td>
</tr>
<tr>
<td>4</td>
<td>SB/WB</td>
<td>CHILES POPE VALLEY RD</td>
<td>Pope Canyon Road</td>
<td>Lower Chiles Valley Road</td>
<td>0.08</td>
</tr>
<tr>
<td>5</td>
<td>NB/EB</td>
<td>DEER PARK RD</td>
<td>Sanitarium Rd (North)</td>
<td>Silverado Trail</td>
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</tr>
<tr>
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<td>SB/WB</td>
<td>DEER PARK RD</td>
<td>Sanitarium Rd (North)</td>
<td>Silverado Trail</td>
<td>0.42</td>
</tr>
<tr>
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<td>NB/EB</td>
<td>DEER PARK ROAD</td>
<td>Sanitarium Rd (North)</td>
<td>Silverado Trail</td>
<td>0.35</td>
</tr>
<tr>
<td>8</td>
<td>SB/WB</td>
<td>DEER PARK ROAD</td>
<td>Silverado Trail</td>
<td>St. Helena Highway (SR 29/128)</td>
<td>0.26</td>
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<tr>
<td>9</td>
<td>NB/EB</td>
<td>FLOSDEN ROAD</td>
<td>American Canyon Road</td>
<td>Napa/Solano County Line</td>
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<tr>
<td>10</td>
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<td>American Canyon Road</td>
<td>Napa/Solano County Line</td>
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<tr>
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### Transportation

#### Segment Descriptions

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## 4.4 TRANSPORTATION

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*2030 without proposed General Plan Update Roadway Improvements*

Source: Dowling Associates 2006
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Transportation Safety

Roadway Collision

California’s Statewide Integrated Traffic Records System (SWITRS) collects, records and processes detailed collision data for the State. Uniform data collection tools and methods are used to produce meaningful statistics to improve roadway conditions and monitor the effectiveness of enforcement efforts. **Table 11** presents the top 20 locations where traffic collisions were reported in the County. The data is presented in the table by the proximity to the nearest intersection. Due to the rural nature of many roadways in the County, the location of the collision may be a considerable distance from the nearest intersection. As shown in the table nearly 75% of the

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<th>Segment Number</th>
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APPENDIX C

EXISTING NOISE LEVELS
Noise Levels at LT-1
Angwin Site A
~70 feet from the Center of College Avenue
October 16 - 17, 2008

Figure 2
Noise Levels at LT-2
Moskowite Corner Sites A and B
~50 feet from the Center of SR 128
October 16 - 17, 2008

Figure 3
62 dBA Ldn
Noise Levels at LT-3
Moskowite Corner Sites C and D
~42 feet from the Center of SR 121
October 16 - 17, 2008

Figure 4

61 dBA Ldn
Noise Levels at LT-4
Spanish Flat Sites C, D and E
~100 feet from the Center of Berryessa Knoxville Road
October 16 - 17, 2008

Figure 5

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Noise Levels at LT-5
East Side of Napa Pipe Site B
October 16 - 17, 2008

Figure 6

66 dBA Ldn