MASTER RESPONSES TO COMMENTS

MASTER RESPONSE-1. REQUEST TO EXTEND PUBLIC COMMENT PERIOD

Several comments have stated the public input process was not sufficient due to technical difficulties in accessing the Draft EIR and associated technical appendices. For this reason, these comments have requested that the comment period of the Draft EIR be extended.

Availability and Access to Draft EIR

The Draft EIR for the proposed project was prepared and circulated for a 45-day public review period beginning on October 24, 2017. The County noticed the document's availability in accordance with the State *CEQA Guidelines* and circulated a Notice of Availability to surrounding property owners. In addition, noticing for the proposed project was published in the Redding Record Searchlight (October 24, 2017), a newspaper of general circulation, posted with the Shasta County Clerk (October 24, 2017), and posted at both the Shasta County Library Branches in Redding and Anderson (October 24, 2017).

The County made reasonable efforts to provide the community with multiple options to access the Draft EIR. Hard copies of the Draft EIR were available for public review or purchase at the public counter of the Shasta County Department of Resource Management, Planning Division, at 1855 Placer Street, Suite 103, Redding, California 96001, during normal business hours (8:00 a.m. to 5:00 p.m. Monday through Friday). Public access to this facility is provided in accordance with the American with Disabilities Act (ADA). Electronic copies of the Draft EIR and technical appendices were made available on the County's website online at: http://www.co.shasta.ca.us/index/drm_index/planning_index/eirs.aspx. Hard copy, including electronic versions of the Draft EIR in Portable Document Format (PDF), were also made available at the Shasta County Library located at 1100 Parkview Avenue, Redding, California and the Shasta County Library, Anderson Branch located at 3200 West Center, Anderson, CA 96007.

Section 15201 of the State *CEQA Guidelines* notes that agencies should make documents available of the Lead Agency's website; however, does not mandate online posting. As a matter of practice, the Shasta County Department of Resource Management posts environmental clearance documentation on its website and as noted above provided the public with noticed online access to the Tierra Robles Draft EIR and technical appendices on October 24, 2017. However, after circulation began, Staff was made aware that the online version of the Draft EIR had inadvertently omitted referenced graphical exhibits or "Figures." It should be noted that this inadvertent omission of chapter Figures was limited to the online version of the Draft EIR only, with distributed hard copy and CD versions containing all referenced figures. Upon receiving notice of this omission, staff immediately rectified the problem and uploaded the completed Draft EIR chapters the same day. Refer to *County Corrective Actions*, below, for additional detail.

One commenter also noted that a physical copy of the Draft EIR appendices was not readily available at the Shasta County Library in Redding and noted additional technical difficulties accessing the electronic copy of appendices that accompanied the Draft EIR. It should be noted that consistent with the NOA, the technical analysis and documentation, including information relative to the proposed Tierra Robles Community Services District (Appendix 15.2) and Biological Resources Documentation (Appendix 15.4), were available in hard copy format for public viewing along with the Draft EIR beginning on October 24, 2017, at the Department of Resource Management located at the address noted above. The County subsequently submitted a hard copy of the technical appendix to the Shasta County Library immediately upon notification of this inadvertent oversight and notified the commenter. Refer to *County Corrective Actions*, below, for additional detail.

Other comments noted difficulties in opening online versions of the project appendices on home computers and at the County Library due to large file sizes. In addition, it was noted that a portion of the appendix (specifically Appendix 15.2 and 15.4) were too large to open for several internet providers. In direct response to this, staff made CD copies of the Draft EIR and technical appendices available free of charge for those who were experiencing online technical difficulties. This was noticed on the County's website in addition to individual notifications sent to those individuals that submitted a comment or concern on the matter. As noted above, the complete document, including appendices, has been available at the Department of Resource Management public counter in paper form and on compact disc from the beginning of the public review period.

County Corrective Actions

Upon receiving notification of complications accessing the Draft EIR, County staff immediately employed several corrective actions to resolve difficulties in retrieving the information. It should be noted that these actions are not as a result of failure to comply with §15105 of the State *CEQA Guidelines* related to public review and distribution, rather, reflect a good-faith effort by the County to provide alternative access to the Draft EIR for those who raised concerns.

- Upon notification of missing Draft EIR figures, updated Draft EIR sections were uploaded to the County's website the same day.

- Upon notification of a hard copy of the Technical Appendices (Section 15.0) being absent at the Shasta County Library in Redding, County staff delivered a complete hard copy of Section 15.0 the same day.

- The County's website containing the Draft EIR and related materials was updated to include the following statement:

  *"**PLEASE NOTE: Some of the Appendices are very large and may take a long time to download. CD's are available upon request that contain the appendices. To receive a CD, please contact Kent Hector at khector@co.shata.ca.us or by phone at (530) 225-5532."*

- County staff also responded via email to individuals that raised a concern regarding the availability of information with the above statement and again stating the availability of the Draft EIR and related materials at the public counter of the Shasta County Department of Resource Management, Planning Division, at 1855 Placer Street, Suite 103, Redding, California 96001, during normal business hours (8:00 a.m. to 5:00 p.m. Monday through Friday).

State CEQA Guidelines Section 15105 - Unusual Circumstances

Pursuant to the CEQA statute and the regulations implementing CEQA (State *CEQA Guidelines*), the public review period for a Draft EIR must not be fewer than 45 days, or longer than 60 days, except under unusual circumstances (Pub. Res. Code §21091(a); 14 Cal. Code Regs. §15105(a)). The State *CEQA Guidelines* also indicate that a Lead Agency, in this case Shasta County, is under no legal obligation to grant an extension of the public review period; and that the decision to do so is at the discretion of the Lead Agency. The State *CEQA Guidelines* provide, however, that if an extension is granted, in no event may the public review period run beyond 60 days absent "unusual circumstances." (14 Cal. Code Regs. §15105(a)). There is no case law compelling a Lead Agency to extend the comment period upon request,

or otherwise limiting the Lead Agency's discretion in deciding whether to grant an extension. Likewise, there is no case law defining what "unusual circumstances" might justify a longer review period.

Planning staff has followed all procedures and has exceeded the legal requirements with regard to public and agency notice and scoping meetings prior to preparing the Draft EIR, consultation with agencies and individuals during the Draft EIR preparation, and providing public and agency notice of the availability of the Draft EIR for review. Complete documents, including all figures and exhibits, and all appendices, have been available to the public from the beginning of the public review period (October 24, 2017). As noted above, the State *CEQA Guidelines* does not prescribe how or where the Draft EIR must be made available, only that it shall be available for public and agency review and that adequate notice of that availability be provided. It does not require that the lead agency post the Draft EIR on their website, or make electronic copies available, or provide CDs, or distribute copies to the library; however, the County, in good faith, has provided the Draft EIR in all noted formats to provide the greatest availability and convenience to the public.

Planning Staff evaluated requests for an extension of the public review period and concluded that an extension of the public review period to December 29, 2017 was appropriate. No further response is necessary.

MASTER RESPONSE-2. ZONING AND DENSITY

Numerous comments received during the public review period raise concerns regarding the density of the proposed project in relationship to the surrounding residential area, the consistency of the proposed project with the applicable planning policies, the adequacy of the EIR discussion of land use impacts and the potential for future development to occur at the density of the proposed project. The following Master Response address comments received relative to land use and planning (refer to Section 5.10, LAND USE AND PLANNING, of the Draft EIR).

Background

Under California law, cities and counties must adopt a comprehensive, long-term general plan, which consists of a set of goals and policies that guide local land use decisions. The general plan must also contain a map or diagram within the land use element illustrating land use distribution by type of use, such as commercial, residential, and open space. The Shasta County *General Plan*, last amended in 2004, serves as the principal land use planning and policy document for the County. It identifies strategies, policies, and implementation recommendations for land use within its planning area. The Shasta County *General Plan* is a long-range comprehensive plan that governs growth and development in the unincorporated areas of Shasta County, including the proposed project site.

The actual physical use and development of land within the County's *General Plan* is regulated by zoning laws. The County's *Zoning Plan* acts as an implementation tool for the land uses and policies established by the County's *General Plan*. While the *General Plan* presents a broad vision and policies for the County, the *Zoning Plan* designates permitted uses and provides specific development standards and regulations for various uses on individual parcels. Zoning regulations affect land use, design, parcel size, building heights, density, setbacks, landscaping, fencing, and other aspects of property use.

Section 5.10, LAND USE AND PLANNING, of the Draft EIR evaluated the proposed project in terms of whether it would 1) physically divide an established community; 2) conflict with any adopted plans, policies, and regulations adopted for the purpose of avoiding or mitigating an environmental effect; and 3) conflict with any applicable habitat conservation plan or natural community conservation plan. As part of this evaluation, the EIR preparers 1) reviewed applicable planning documents, including the Shasta County *General Plan* (2004), and *Shasta County Code* Title 15 (Subdivision Regulations) and Title 17 (Zoning); 2) consulted with Shasta County Department of Resource Management staff regarding policy interpretation; and 3) examined the surrounding area to determine whether the proposed project would be compatible with land uses in the immediate project vicinity.

The analysis contained in the Draft EIR specifically evaluated the proposed project's consistency with the Shasta County *General Plan* (2004), and *Shasta County Code* Title 15 (Subdivision Regulations) and Title 17 (Zoning). As identified in the Draft EIR, the proposed project would require Zone Amendment to apply the Planned Development (PD) zone district to the existing Rural Residential (R-R), with a minimum lot area of three to five acres (R-R-BA-3 and R-R-BA-5) and Unclassified (U) zoning districts. The proposed design is intended to maintain a semi-rural appearance given the siting of proposed building envelopes, the extent of open space preservation (approximately 74.2%), and the overall density of the development (1 dwelling unit per 4.4 gross acres). The proposed parcels range in size from 1.38 acres to 6.81 acres with the smallest lots (1.3 acres to 2 acres) sited internal to the subdivision. The proposed project would be required to comply with *Shasta County Code,* Title 17 (Zoning), which is designed to ensure land use compatibility and orderly development. Regulations for

setbacks, density, allowed land use, and other elements of development projects serve to reduce incompatibility that might otherwise accompany unplanned development.

General Plan Consistency

The State *CEQA Guidelines* require an EIR to "discuss" any potential inconsistencies with applicable plans, but they do not explicitly require that an EIR reach a conclusion on whether a conflict exists (see State *CEQA Guidelines* §15125[d]). Because the policy language found in any local agency's general plan and other applicable land use plans is susceptible to varying interpretations, it is often difficult to determine, in the context of an EIR, whether a proposed project is consistent or inconsistent with applicable plan policies. The analysis of general plan consistency serves to present decision-makers and the public with information and background regarding the relationship of the proposed project to applicable land use plans, in this case the Shasta County *General Plan*. It is recognized that not every general plan policy is applicable to or affected by implementation of the proposed project. For this reason, the analysis in Table 5.10-2, CONSISTENCY ANALYSIS WITH SHASTA COUNTY GENERAL PLAN OBJECTIVES AND POLICIES FOR LAND USE AND PLANNING (Draft EIR page 5.10-15), is limited to those *General Plan* policies that govern or inform development of the proposed land use at the project site.

Case law interpreting planning and zoning law (Government Code §65000 et seq.) makes it clear (i) that the meaning of land use plan policies is to be determined by the city council or Board of Supervisors, as opposed to city/county staff, EIR consultants, applicants, or members of the public, and (ii) that the city council's/Board of Supervisors' interpretations of applicable plan policies will prevail if they are "reasonable," even though other reasonable interpretations are also possible (see *No Oil, Inc. v. City of Los Angeles* (1987) 196 Cal.App.3d 223, 245–246, 249). Consistency does not require full compliance with all plan policies. Courts have recognized that a general plan must try to accommodate a wide range of competing interests—including those of developers, neighboring homeowners, prospective homebuyers, environmentalists, current and prospective business owners, jobseekers, taxpayers, and providers and recipients of all types of municipal services—and to present a clear and comprehensive set of principles to guide development decisions. Once a general plan is in place, it is the province of elected officials to examine the specifics of a proposed project to determine whether it would be "in harmony" with the policies stated in the plan (see *Sequoyah Hills Homeowners Association v. City of Oakland* (1993) 23 Cal.App.4th 704, 719).

Courts have further recognized that, because general plans often contain numerous policies emphasizing differing and at times contrasting legislative goals, a development project may be "consistent" with a general plan, taken as a whole, even though the project appears to be inconsistent or arguably inconsistent with some individual policies (see *Sequoyah Hills Homeowners Association,* supra). Furthermore, courts strive to "reconcile" or "harmonize" seemingly disparate general plan policies (see *No Oil,* supra, 196 Cal.App.3d at p. 244). An inconsistency between a proposed project and an applicable plan is a legal determination, not a physical impact on the environment. However, to the extent to which physical effects could occur with development of the proposed project, as facilitated by the proposed project, those effects are addressed throughout the Draft EIR.

Proposed Zoning and Density

Several comments received during the public review period raise concerns regarding the density of the proposed project in relationship to the surrounding residential area. These comments state the opinion that the scale of the proposed project is incompatible with the character of the area, and would result in significant impacts to the surrounding neighborhood. These comments also suggest that because the

proposed zoning would be incompatible with the surrounding area, the only development that should occur on the site should be under the existing designations (i.e., minimum lot area of three to five acres (R-R-BA-3 and R-R-BA-5) and Unclassified (U) zoning districts).

The Shasta County *General Plan* designates the proposed project site as Rural Residential A (RA) (1 dwelling unit / 2 acres). As noted in the *General Plan*, lands classified as RA and RB should not be assigned specific parcel sizes or densities prior to review of detailed site-specific information. Instead, specific parcel size requirements should be applied to RA and RB lands only after collection and analysis of the site-specific data required to accurately make these determinations. The Draft EIR, utilizing site-specific data, evaluated the site's ability to support the proposed project based on water supply availability, wastewater treatment capacity, vehicular access, fire hazards, and slope constraints. Based on the analysis, the 715.4-acre site has the capability to support the project as currently proposed at 1 dwelling unit per 4.4 gross acres.

As noted in Table 5.10-1, EXISTING GENERAL PLAN AND ZONING LAND USE ASSUMPTIONS (Draft EIR page 5.10-3), the site's ultimate development potential under existing County zone classifications would conservatively yield 188 residential units, approximately 11 percent more than the proposed project, or 1 dwelling unit per 3.7 gross acres.

As mentioned above, the existing *General Plan* land use designation for the entire proposed project site is Rural Residential A (RA), which allows a maximum density of one dwelling unit per two acres. While the proposed parcels range in size from 1.38 acres to 6.81 acres, the smallest lots (1.3 acres to 2 acres) would be sited internal to the subdivision and the project layout has been designed to consider the natural physical characteristics and constraints of the property by avoiding sensitive habitat areas, minimizing cut and fill by following the natural contour of the land, and by preserving significant clusters of oak trees. In addition, the overall density of the development, (1 dwelling unit per 4.4 gross acres with a total of 166 units), is 22 units less than what would be allowed under the current *General Plan* land use designation.

As noted, the Draft EIR found that the overall density of the proposed project is not substantially inconsistent with densities within the surrounding area; however, the proposed project does not conform to the grid like pattern of residential lots within the surrounding area. The proposed design is intended to maintain a semi-rural appearance given the siting of proposed building envelopes, the extent of open space preservation (approximately 74.2% of the site), and the overall density of the development (1 dwelling unit per 4.4 gross acres). Draft EIR Figure 5.10-1 illustrates the proposed project relative to the existing surrounding neighborhood. This figure and the discussion in the Draft EIR support the conclusion that the overall scale and intensity of the project is substantially consistent with other densities in the surrounding area.

It is important to note that Shasta County's ultimate determination in finding a project consistent or inconsistent with its *General Plan* or *Zoning Plan* is not predicated upon any local requirement or State regulation which mandates proposed development densities be correlated with surrounding densities at a 1:1 ratio. From a planning perspective, project consistency is viewed through the lens of the general plan and prescribed zoning restrictions of the district. Based on this review, consistency is ultimately achieved when the following two criteria are satisfied: 1) the project is determined to be in harmony with applicable goals and policies of the general plan; and 2) the project meets the stringent development standards of the existing or proposed zone district.

Comments regarding development under the existing zoning and *General Plan* land use designation are specific to the merits of the proposed project and do not directly raise an environmental issue that warrant further consideration under CEQA. These comments are referred to decision-makers for further consideration as part of the deliberative process, and no further response is necessary.

Alternative Zoning and Density Evaluations

The EIR fully analyzed the increased density of the proposed project and identified the level of physical impacts to the surrounding residential neighborhood based upon the increased development. The EIR analyzed impacts to views, the increase in project generated traffic, increased noise, fugitive dust and other construction related emissions, and the removal of vegetation including mature trees. These impacts were evaluated within the context of the Draft EIR in the applicable topical CEQA section (i.e., Aesthetics, Biological Resources, Cultural Resources, etc.). Project specific mitigation measures were also developed to minimize the extent of these impacts to a *less than significant* level wherever feasible. As noted in the Draft EIR, the proposed project would have the following *significant and unavoidable* environmental impacts: Agricultural Resources (refer to Section 5.2); Air Quality (refer to Section 5.3); Biological Resources (refer to Section 5.4); Greenhouse Gases and Climate Change (refer to Section 5.7); and Traffic and Circulation (refer to Section 5.16).

The Draft EIR included an evaluation of alternatives that included a wide range of densities that could avoid or substantially lessen environmental impacts of the proposed project related to the environmental categories listed above (refer to Section 7.0, ALTERNATIVES TO THE PROPOSED PROJECT). As noted in Section 7.0, the following alternatives to the proposed project were initially considered but determined not to be viable and eliminated from further consideration: 1) Alternative Site; 2) Annexation to Community Service Area No. 8; 3) Development in Accordance with Existing General Plan Land Use and Zoning Classifications; 4) Clustered 3-Acre Parcels; and 5) Wastewater Dispersal Alternative. Refer to Section 7.0 of the Draft EIR for discussion of each rejected alternative.

Alternatives that would avoid or substantially lessen any of the significant effects of the project and that would feasibly attain most of the basic project objectives were evaluated in detail. These alternatives included the following: 1) No Project; 2) No Project / Development in Accordance with Existing Zoning; 3) Non-Clustered Large Lot; and 4) Reduced Density (25 percent reduction). It should be noted that these alternatives and several of the rejected alternatives were suggested by the public during the 2012 and 2016 scoping sessions.

As noted above, the Draft EIR did evaluate a development concept under the existing zoning classifications onsite. Under this alternative the number of residential dwelling units was reduced from 166 to 80 representing a reduction of 86 units, or approximately 51 percent. However, the 325.6 acres of Unclassified (U) zoning would remain available for other types of unspecified future use that is consistent with the Shasta County *General Plan*, and said development may also result in impacts. Under this alternative, the efficient and orderly integration planning of future land uses as well as the significant preservation of open space would not be achieved to the degree as the proposed project. While many environmental categories would be slightly reduced under this alternative, impacts related to agricultural and biological resources would remain *significant and unavoidable*. As a result, this alternative was ultimately determined not to be environmentally superior to the proposed project (refer to Draft EIR page 7-26).

Some comments noted several existing large areas (80 to 160 acres) north of the site and other large tracts of land larger than 10 acres to the south and the proposed project is inconsistent with these areas. While the several parcels to the north and south of the project site vary in size, the overall project density of one dwelling unit per 4.4 acres is not considered inconsistent with existing properties to the east, southeast, and west, nor inconsistent with the larger areas noted by the comments. It should be noted that over 70 existing parcels between 1 and 6 acres are present west of the referenced large-acre undeveloped parcels to the immediate north of the project and over 20 existing parcels between 2 and 6 acres surround the larger parcels to the south. Unique to the proposed project is the large 154.9-acre open space preservation area proposed on the east side of the property. This parcel would serve to provide continuity with several of the larger parcels to the north, while maintaining a large open space preserve for environmental stewardship. It should be noted that the project proposes a total open space preservation of 192.7 acres onsite that will be maintained in perpetuity in accordance with Mitigation Measure (MM) 5.2-2.

As previously noted above under *Proposed Zoning and Density*, comments identifying the scale of the proposed project as incompatible with the character of the area and suggesting that the only development should be under the existing zoning designations are referred to decision-makers as opinions on the project and not subject to further response under CEQA.

Inducement of High Density Developments

A number of comments further contend that the proposed project's land use amendment, if approved, may be used to justify other high density developments within the area. It is first important to note the project's overall density is consistent with the Shasta County *General Plan* for the site as discussed above. Even if the project represented an increase in density above what is already planned for in the Shasta County *General Plan*, this contention is inconsistent with the requirements of CEQA. In the event that future high density development is proposed within this area of unincorporated Shasta County, the environmental impacts and merits of that future project will be evaluated at that time, as required by CEQA. It is speculative to state that the proposed project would be used as justification for promoting high density development in the area. CEQA analysis is limited to what is known or reasonably foreseeable, assuming further rezoning is speculative and not a part of the analysis included in the Draft EIR.

Promote Premature or Leap-Frog Development

Significant growth can occur if a new project is located in an isolated area and when developed it brings sufficient urban infrastructure to cause new or additional development pressure on the intervening and surrounding land. This type of induced growth leads to conversion of adjacent acreage to higher intensity uses, either unexpectedly or through accelerated development. This conversion occurs because the adjacent land becomes more suitable for development and, hence, more valuable because of the availability of the new infrastructure. This type of growth inducement is typically termed "leap frog" or "premature" development because it creates an island of higher intensity development land within a larger area of lower intensity land use.

As described in Section 3.0, PROJECT DESCRIPTION, the proposed project is located within a primarily rural residential area with parcels varying in size from 1 to 20 acres and some undeveloped land. Except for a small pocket of undeveloped land to the south, single-family rural homes predominate the areas to the west, south and east of the proposed project. The area to the north, between the proposed project and Seven Lakes Lane is largely undeveloped but contains a few residences, a gun and rod club, Clough

Creek, and an area containing small lakes and ponds. This area is classified as Rural Residential in the Shasta County *General Plan* and as Rural Residential 5 acre-minimum in the *Zoning Plan*.

Further from the proposed project in all directions the site is surrounded by rural development. Surrounding development is served by existing roadway infrastructure including Old Alturas Road to the west, Boyle Road to the south, Seven Lakes Road to the north, and Deschutes Road to the east. Within a mile to a mile and a half of the proposed project site there are approximately 1,005 parcels that are less than 6 acres.

Based on these existing land uses the proposed project is consistent with surrounding rural residential land use patterns and is itself filling a gap between the existing developed areas. Although, the small undeveloped parcels between the project and other homes may eventually be developed they would be expected to conform to the assumptions in the Shasta County *General Plan* and *Zoning Plan* and hence, would be consistent with other uses in the vicinity.

Lastly, the proposed project's infrastructure would not serve any future development in or contribute to in the area, although the infrastructure could potentially accommodate contiguous development consistent with the Shasta County *General Plan*, immediately north of the site.

Based on the above discussion, the proposed project is considered consistent with the Shasta County *General Plan* and *Zoning Plan*, and in that it would result in a contiguous development pattern within this portion of the unincorporated County. The proposed project will be accessed by the existing transportation network, and would include its utility infrastructure to serve increased demand. Therefore, the proposed project is not, and would result in any "leap-frog" or "premature" type of development.

Precedent Setting Action

The current Shasta County *General Plan* land use designation for the entire proposed project site is (RA), which allows a maximum density of one dwelling unit per two acres. The proposed project would require Zone Amendment to apply the Planned Development (PD) zone district to the existing Rural Residential (R-R), with a minimum lot area of three to five acres (R-R-BA-3 and R-R-BA-5) and Unclassified (U) zoning districts. Use of the Planned Development (PD) zone is not uncommon and, as discussed on Section 5.10, LAND USE AND PLANNING, "is used to when a proposed development does not fit within the parameters of the standard zone districts…and often provide common areas and other amenities not normally found in standard types of development." Accordingly, the proposed project was designed with the intent to leave a large amount of the project site as open space. The proposed project, however, stays consistent with the land use designations by creating an overall project density of only 4.4 homes per acre. Therefore, although the proposed project will require a zone amendment, the request is consistent with the intent of the *Zoning Plan* and surrounding land uses.

The proposed project also will provide for wastewater treatment onsite through individual septic systems which will flow through a community collection system and ultimately to an onsite community wastewater treatment system. The proposed project will not require usage of any offsite wastewater treatment capacity.

Since the project would be consistent with the requirements set forth in Shasta County *General Plan* and *Zoning Plan*, and does not propose any other elements, or require any special considerations, the

proposed project would not propose any precedent-setting actions that, if approved, would specifically allow or encourage other projects and resultant growth to occur.

MASTER RESPONSE-3. WATER SUPPLY AVAILABILTY AND RELIABILITY

Several comments, including opinions and questions of common concern have been submitted regarding water supply and availability within Bella Vista Water District (BVWD). The following Master Response address comments received relative to water supply (Section 5.17, UTILITIES AND SERVICE SYSTEMS, and Appendix 15.10, WATER DEMAND EVALUATION, of the Draft EIR).

Demand Projections follow Statutory Requirements

The proposed project is similar to other rural residential dwellings within BVWD, given the lot sizes ranging from 1.38 to 6.8 acres; however, each lot within the project site has stipulated development envelopes that restrict irrigable landscape to less than 5,000 square feet, and homes will be built to the latest California Building Code requirements, including being equipped with low and ultra-low water use appliances and fixtures. This landscape restriction, coupled with efficient appliances and fixtures, results in an estimated water use for the proposed lots mimicking new residential developments within the more urban areas of BVWD. Other than the footprint of the residence and hardscapes (e.g. driveways and patios), the remainder of the lot will not have any water demand and will be preserved as native vegetation within the Resource Management Areas (RMAs); refer to ***Master Reponse-4*** regarding RMAs.

A significant assumption for the project's water demand is restricted landscape irrigation demand as determined by the Model Water Efficient Landscape Ordinance (MWELO) within the 5,000 square feet of landscape area. BVWD has already identified that a condition of approval for the project must include County certification of MWELO compliance (refer to requirement 1g in BVWD Letter to Shasta County dated March 24, 2016 provided in Appendix 15.1, NOTICE OF PREPARATION, of the Draft EIR). The County recognizes this requirement and intends to include such provisions as a condition of approval, should the project be approved.

Furthermore, the proposed project includes the formation of the Tierra Robles Community Services District (TRCSD) after approval by the Shasta County Local Agency Formation Commission (LAFCO). As discussed in Appendix 15.2.5, TIERRA ROBLES COMMUNITY SERVICE DISTRICT FORMATION, the Tierra Robles Community Services District (TRCSD) will be the governmental agency that will be in place to oversee the Tierra Robles Development. It is the TRCSD that will have the responsibility to ensure that the Tierra Robles Subdivision adheres to the conditions which were approved by the County of Shasta. Accordingly, the TRCSD would be used as a means to oversee, implement and enforce compliance with the State MWELO or County ordinance requirements (if more restrictive than the State MWELO). It will be incumbent on the TRCSD to make all property owners aware of all covenants and conditions regarding use of all properties within the development area; refer to Appendix 15.2, TIERRA ROBLES COMMUNITY SERVICES DISTRICT.

As detailed in Appendix 15.10, WATER DEMAND EVALUATION, of the Draft EIR, the proposed project's water demand is estimated by separately determining indoor and outdoor use factors for each parcel. Indoor estimates are based upon an assumed average daily per-capita use of 55 gallons for each day of the year. With an average occupancy of 2.5 people, each home would be estimated to use 137.5 gallons per day, or nearly 51,000 gallons per year. The use of 55 gallons per-capita per day (gpcd) complies with the California Water Code §10608.20(b)(2)(A) which directs this value to be used for estimating residential indoor uses.

As most recently codified, the California Water Code has amended the residential indoor standard to drop below 55 gpcd. The new statutory requirements reduce the average value to 52.5 gpcd as of 2025, and potentially to 50 gpcd as of 2030, as required by California Water Code §10609.4(a), chaptered on May 31, 2018. Each reduction in average indoor gpcd below 55 could be superseded by a greater value, if such is jointly recommended to the Legislature by the Department of Water Resources (DWR) and the State Water Resources Control Board (SWRCB). However, it is unlikely that such a joint DWR/SWRCB recommendation would exceed the 55 gpcd standard used in the project's demand analysis. Rather, it is possible that, even given currently available residential water use fixtures and appliances, indoor per-capita demands could be even lower than those estimated using 55 gpcd.

Outdoor demand estimates are also based upon statutory requirements detailed in the California Water Code, including the use of local temperature and climate factors affecting landscape water use (e.g. as detailed in Appendix 15.10, WATER DEMAND EVALUATION, of the Draft EIR, the landscape demands used an evapotranspiration value designated for use in the Redding region). The TRCSD will be tasked with enforcing compliance with these restrictions.

Existing BVWD Residential Use

Several comments compared the proposed project's estimated per-parcel water use (also known as water demand) to existing demands served by BVWD, attempting to demonstrate that the water use estimates are understated. However, many of these comments compared the proposed project's estimated water use to existing rural residences or to BVWD's targeted average gpcd as detailed in its recently adopted UWMP. Because of the landscape restrictions placed on each parcel, a more appropriate comparison of per-dwelling unit water use for the proposed project is an average BVWD urban residential within higher density developments (e.g. an 8,000 square-foot lot with 5,000 square feet of MWELO-compliant landscaping, 2,000 square feet of home foundation footprint, and 1,000 square feet of driveway, patio and other hardscape area). BVWD does not publish data at this detail in their UWMP. Rather, BVWD provides two categories that may relate to the project: residential and rural. The BVWD residential classification includes single- and multi-family residences, and all ages and densities of single family homes. The rural category is undefined as to parcel sizes, typical uses, and other water-use affecting factors. For instance, most rural parcels served by BVWD do not have any restriction on landscape area or use, thus demand can vary significantly on a parcel by parcel basis.

BVWD provides a total population served, which can be divided into the total residential and rural use to develop an average (such data is available in appendices to the UWMP). However, such an average does not provide any basis for comparing to the demand estimates for a new project as it represents an average across many different existing residential and rural users – with no refinement to adjust for density, age of home, occupancy, total irrigated landscape area, or other water uses.

In other projects around the Sacramento and San Joaquin Valleys, Tully & Young has been able to utilize recent meter data for new homes and has generally confirmed the estimates for future homes are consistent with newer homes subject to the various California Water Code statutory restrictions.

Existing Customer Shortages will not be Exacerbated:

Existing users will not see water use reductions any sooner or to any greater degree than currently experiencing as a result of the project. Bella Vista Water District (BVWD) water supply depends on its long-term Central Valley Project (CVP) contract to purchase water from the USBR, as well as existing

groundwater wells within BVWD's service area. As discussed by BVWD, BVWD faces dry-year water supply challenges and is actively working to improve conditions.

As shown in Table 5.17-3 (Draft EIR page 5.17-5), the BVWD anticipates a water surplus between 7,847 and 9,204 acre-feet per year (AFY) through year 2040 during normal rainfall years. During a multiple-dry year period, CVP contract water can be reduced by 50 percent or more for municipal and industrial uses and agricultural water can be reduced to zero percent. Table 5.17-5, SUPPLY AND DEMAND COMPARISON – MULTIPLE-DRY YEAR, (Draft EIR page 5.17-5), available water supplies are projected to be insufficient to meet the water demands under a multiple-dry year period. Therefore, as detailed in the Draft EIR, Mitigation Measure (MM) 5.17-4b is intended to address shortage conditions for the project. However, existing shortage conditions due to a variety of conditions affecting CVP supplies will continue as noted. Once reaching full demand for a specific period (see MM 5.17-4b), the future homeowners at the proposed project will also be subject to the same shortages faced by existing customers. But, due to the structure of BVWD's CVP contract, the demands of the proposed project will not exacerbate the shortage conditions faced by existing users. For instance, if BVWD CVP water supplies are reduced to 50%, the quantity is determined as 50% of the demand during the past three years where the CVP water supply allocation was 100%. If the project's demand were already served within those three prior years, the overall total supply delivered to BVWD would be higher than without the project. Thus, the 50% reduction would apply to the new, higher historic value. BVWD would then implement its Water Shortage Contingency Plan and deliver water to the existing customers (which would include the new project at that point) in a manner that would be the same to today's existing customers whether the project was built or not. The magnitude and frequency of CVP shortages on existing customers will be the same with or without the additional demands of the proposed project.

As required by Mitigation Measure (MM) 5.17-4b, the applicant must provide an alternative supply to serve the project's demands during shortages for the period until three years of 100% CVP allocation have occurred. The project's demands will increase with each phase of the project, and each incremental increase must be recognized as a demand on the BVWD system for three years of 100% CVP allocation. In other words, if the first phase of the project constructs 20 homes, once the water demand associated with those 20 homes has experienced three years of 100% allocation, then the mitigation requirement has been satisfied for those 20 homes. The alternative water supply must be acceptable to BVWD, including addressing any reliability concerns and providing appropriate financing such that BVWD's current customers are not impacted. The details of an alternative water supply and the structure of an agreement with BVWD will be negotiated between BVWD and the applicant, to the satisfaction of the County as the responsible party overseeing mitigation measure implementation. Implementation of Mitigation Measure (MM) 5.17-4b requires the project applicant to identify and implement an agreement to augment BVWD dry-year water supplies prior to commencement of project construction. This measure ensures that actual physical development does not occur until such time as there is adequate water to serve it.

To make water available for transfer either on a temporary or permanent basis, a willing seller may take an action to legally make water available by reducing the consumptive use through idling cropland, pumping of groundwater, or other allowed methodology. In the case of the proposed project, the required water would be secured by the project applicant to temporarily offset project-related dry-year allocations, although the transaction would be contractually between BVWD and a selling entity. The purchased water would be limited to serve the needs of the proposed project only and would not be available to support any new demand in BVWD's service area.

The BVWD would act as the Lead Agency over this future transaction and water supply provided to BVWD under any future transfer agreement must demonstrate long-term availability (i.e., reliability of the water source). This Agreement and the subsequent water supplied to BVWD would ensure that project-related dry-year water demands would not exacerbate water supply shortfalls within BVWD's service area.

MASTER RESPONSE-4. RESOURCE MANAGEMENT AREAS

Several comments, opinions and questions of common concern have been submitted regarding the size and function of the Resource Management Areas (RMAs). The following Master Response address comments received relative to the RMAs (Section 5.4, BIOLOGICAL RESOURCES, of the Draft EIR).

Approach

The approach to the proposed project was to find a way to implement a housing development within oak woodland and grassland ecosystems while maintaining and enhancing the natural resources of those areas. As the technical study analysis and Draft EIR progressed, it soon became evident that the 715 acres of the project area had several distinctive natural communities that would require separate management prescriptions if the resources were to be maintained and enhanced. As identified in the Tierra Robles Biological Review (refer to Appendix 15.4), these ecosystems manifested themselves in four unique vegetation associations grown over diversified soil types. The four associations are described in Section 5.4, BIOLOGICAL RESOURCES, and Appendix 15.4, BIOLOGICAL RESOURCES DOCUMENTATION, of the Draft EIR, as follows (refer to Appendix 15.4, report titled *Chatham Ranch Biological Evaluation*, of the Draft EIR, specifically Figure 2):

- Annual grassland: 88.1 acres
- Blue oak woodlands: 474.3 acres
- Blue oak/Interior live oak woodland: 138.77 acres
- Interior live oak: 20.01 acres

As discussed on page 3-14, 3-20, 3-21, and 5.10-19, in the Draft EIR, and in Appendix 15.2, TIERRA ROBLES COMMUNITY SERVICES DISTRICT, in order to provide onsite mitigation and to manage these vegetative associations, the project site was divided into five RMAs. Four of the RMAs generally conform to the location of the vegetation associations. The fifth RMA is comprised of what is called "Open Space Areas" (OSA) within the four vegetation associations; OSAs are essentially non-developed areas.

For each of the five RMA areas, a set of management guidelines was developed with two primary objectives. First, within the oak woodland area, in order to enhance the oak stand vigor and mast (canopy) production, timber stand improvement (TSI) thinning would be used to remove suppressed trees to reduce competition for sunlight, available moisture, and nutrients and facilitate increased wildlife habitat value. Accordingly, as discussed on pages 21 through 26 of Appendix 15.2.3, the intent is to create an Ideal Oak Stand (IOS). The use of the RMA management guidelines would create an IOS with characteristics including a reduced fuel load to reduce the risk of fires, providing foraging, nesting, escape cover, and microhabitats for species, improving breeding habitat, encouraging acorn production and establishment of replacement trees, and encouraging diversity of vegetative species and vegetative structure both horizontal and vertical would increase the value of the habitat. In addition, the second main objective is to reduce fire fuel loading to comply with the California Department of Forestry and Fire Protection/Shasta County Fire Department requirements (refer to Appendix 15.2, TIERRA ROBLES COMMUNITY SERVICES DISTRICT, of the Draft EIR, specifically, *Tierra Robles Wildland Fuel/Vegetation Management Plan*). This will be done by reducing fine fuel (grass) height and the removal of mid-story shrub vegetation from some areas to reduce fire intensity and rate of spread.

Privately Owned RMA Areas

For each of the 166 proposed parcels, a building envelope has been designated in which a residence may be constructed. The remainder of each parcel is to remain open and managed in accordance with the RMA guidelines as appropriate for the location of each individual parcel. For example, if parcel 1 is located in RMA 2, then the parcel will be managed in accordance with the RMA 2 guidelines; if the parcel is located in RMA 1 then it will be managed in accordance with RMA 1 guidelines, and so forth. Management guidelines are detailed in Appendix 15.2, TIERRA ROBLES COMMUNITY SERVICES DISTRICT, of the Draft EIR, specifically, the *Tierra Robles Oak Woodland Management Plan*.

RMA boundaries were drawn along parcel lines that most closely matched the vegetation association where the parcel was located. For example, if 90% of a parcel was grassland (RMA 1) and 10% was oak woodland (RMA 2), the parcel was considered as being in the grassland vegetation association and the management guidelines for the annual grasslands (RMA 1) would apply to the parcel. It is the responsibility of the landowner to comply with the management prescriptions of the RMA in which his property is located, and the Tierra Robles Community Services District (TRCSD) to ensure that the property owner is complying with the prescriptions. As discussed in Appendix 15.2.5, TIERRA ROBLES COMMUNITY SERVICE DISTRICT FORMATION, the TRCSD will be the governmental agency that will be in place to oversee the proposed project. It is the TRCSD that will have the responsibility to ensure that the development adheres to the conditions which were approved by the County of Shasta. Accordingly, the TRCSD will ensure these prescriptions are followed. Ultimately, the formation of the TRCSD will require a condition of approval to be placed on the project. The condition will therefore have to be satisfied prior to the recording of the final map for the first phase of the project.

Open Space RMA Areas

The OSAs comprise 192.7 acres, or 26.9%, of the total project area. The OSAs are located in two separate locations on the project site. The first OSA is located in the eastern portion of the project site and consists of what is called the East Creek drainage. This OSA has a diversity of vegetation including annual grasslands, oak woodlands and wetland plants associated with the stream itself. East Creek runs north to south and the area provides a natural travel corridor for wildlife.

The second OSA is located within the northwest portion of the project site in association with the Clough Creek stream system. This OSA contains Clough Creek itself and diversity of vegetation including wetland plants, annual grassland and oak woodlands. The combination of available water and diversity of vegetation combine to make it a valuable wildlife habitat and functions as a natural travel corridor for wildlife (refer to Appendix 15.4, BIOLOGICAL RESOURCES DOCUMENTATION, and Section 5.4, BIOLOGICAL RESOURCES, of the Draft EIR).

Although no development is planned for any OSA, they need to be managed to enhance oak resources and to reduce fire fuel loading. In order to do this, specific management prescriptions were written for the East Creek and the Clough Creek OSAs. Implementation of these prescriptions will be the responsibility of the TRCSD (refer to Appendix 15.4, BIOLOGICAL RESOURCES DOCUMENTATION). Figure 8 of the *Tierra Robles Oak Woodland Management Plan*, in Appendix 15.2, TIERRA ROBLES COMMUNITY SERVICES DISTRICT, of the Draft EIR illustrates the location of the five RMA's with respect to the stream courses and parcels. Management guidelines are detailed in the *Tierra Robles Oak Woodland Management Plan*, Appendix 15.2, TIERRA ROBLES COMMUNITY SERVICES DISTRICT, of the Draft EIR.

MASTER RESPONSE-5. COMMUNITY WASTEWATER SYSTEM

Several comments, including opinions and questions of common concern have been submitted regarding the proposed community wastewater system. The following Master Response address comments received relative to wastewater management and onsite disposal (Section 5.17, UTILITIES AND SERVICE SYSTEMS, of the Draft EIR).

General System Operations

The proposed projects' wastewater treatment system has been developed to incorporate both "grey water" and a wastewater (commonly referred to as sewage or "black water") system components at each individual residential unit, as well as a community wastewater collection, treatment and disposal system.

Typical average wastewater flows from residences is approximately 150 gallons per day (gpd), but the proposed project has evaluated wastewater flows at a higher rate of 200 gpd to provide an engineering design factor of safety, to ensure that the overall wastewater system can provide sufficient capacity for anticipated uses. Based on these design assumptions, the overall wastewater flow (grey water and wastewater combined) is 33,200 gpd at the full build-out of 166 homes.

Permitting for these systems includes local permit oversight through a Shasta County Sewage Disposal Permit and a separate permit for grey water disposal from the Shasta County Building Division. The grey water systems are also required to be reviewed by the Shasta County Environmental Health Department to ensure design plans follow applicable State and County requirements.

In addition to these local permits, the overall wastewater treatment and disposal system will be required to be permitted by the State of California Central Valley Regional Water Quality Control Board (CVRWQCB) who will issue separate Waste Discharge Requirements (WDR) for the facility. These specific WDR's are issued after the project is approved by Shasta County and final design documents are developed for the system.

Individual Residences

Individual residences may have separate grey water and wastewater systems installed at homesites, which is classified as a partial dual-plumbing wastewater drain system that complies with Chapter 15 of the California Plumbing Code. In these cases, grey water will be disposed of onsite as landscape irrigation water and wastewater will be collected and sent to the community treatment system. Wastewater would be collected onsite by a septic tank, which would provide primary treatment and residence time for the wastewater, before being pumped to the community collection main sewer line in the adjacent street.

The proposed project consists of 166 new single-family residential lots that would be developed in three phases, of approximately equal size. The average size residence is 3.5 bedrooms, with an optional "mother in-law" unit, and would have an estimated 200 gpd of wastewater flows (80 gpd grey water and 120 gpd wastewater).

Each homeowner would be required to secure separate grey water system permits from the Shasta County Resource Management Department as part of the installation of the grey water system, as well as a sewage disposal permit from the CVRWQCB.

Grey Water

Homes constructed with a grey water system that collects flow from clothes washing machines, showers and tubs will drain to a manual diverter valve. Normally this valve will direct flow to a landscape irrigation grey water system to provide irrigation for location appropriate drought tolerant trees and shrubs. During periods of rainfall the grey water flow will be directed to the septic tank, to ensure that onsite locations are not overloaded with grey water. Operation of this valve is the responsibility of the homeowner.

Homeowners will be provided design criteria for landscaping selection, dispersal system criteria, as well as for operations and maintenance. Typical dispersal is by gravity to individual plant mulch basins designed for the evapotranspiration requirements of individual plants. Guidelines for storm water catchment to supplement irrigation needs will also be provided in the continuing effort to reduce the traditional irrigation need for potable water.

The proposed project design has estimated that grey water flow is approximately 40% of the total flow from the home; or about 80 gpd. The overall design of both the onsite residential and community wastewater system has been designed to accommodate two possible flow conditions one where no grey water diversion occurs, and flows go directly to the wastewater system (Condition #1) and one where grey water is diverted for landscape disposal during irrigation seasons (Condition #2).

Condition #1 has assumed that no grey water diversion occurs at any home, and that all grey water is diverted to the wastewater system. This is a likely scenario during the wet winter months, when irrigation is not occurring. In this condition the wastewater system will take the entire daily flow of the entire development (166 homes at build-out) at 33,200 gpd. From an overall wastewater system design factor, this condition has been used in the facility design to provide for the highest anticipated wastewater flows.

Condition #2 assumes all homes will be diverting the grey water flow during the irrigation season. In this condition the wastewater system must accommodate 60% of the total flow, or 19,920 gpd.

Wastewater

The residential wastewater system has been designed by the proposed project to accommodate all residential wastewater (grey water and wastewater). The wastewater from the individual home will flow by gravity to a watertight septic tank that is oversized to provide emergency storage capacity and additional treatment capacity. A three-bedroom residence will have a minimum 1,500-gallon septic tank and a four-bedroom residence will have a minimum 2,000-gallon tank. The septic tank system, including pressure lateral from the tank to the street right of way, will be installed at the time the home is constructed, at the expense of the home builder.

The septic tank will be located as approved by the Community Services District (CSD) to the front or side of the home such that it remains readily accessible for inspection and maintenance, including pumping. Tanks must be protected from vehicle traffic or they will have to be designed and constructed for vehicle loading. Surface storm water drainage must be directed away from the tank location and access risers. Access riser lids will extend at least two inches above the surrounding ground surface to eliminate the potential for storm water intrusion and to improve service access.

The septic tank installation will be required to meet the requirements of the California plumbing code, Shasta County requirements and specific requirements of the CSD including specifications for make and model of tank and equipment. Consistency is necessary for efficient operations, monitoring and maintenance. Each tank will be equipped with an effluent filter, dual effluent pumps, permanent access risers with lids, liquid level floats, controls, and alarms, including an excessive water use alarm. Floats will be set to provide 200 gallons of emergency storage capacity above the high-level alarm float. The pressure sewer service lateral will be equipped with a backflow prevention valve and shutoff valve. The septic tank and pressure lateral will be owned and maintained by the CSD.

The control panel for the septic tank will be located as approved by the CSD on an exterior wall of the home. Power supply for the control panel and pumps will be provided by the homeowner. The control panel will communicate (including remote alarm notifications) through the homeowner's telephone or internet service. Communication only occurs when the homeowner is offline.

The wastewater system design has utilized typical residential system wastewater "strength" characteristics for potential constituents of concern. Wastewater strength is a measure of the composition of various elements that are measured individually as Biological Oxygen Demand (BOD), which measures the ability of the wastewater to take or "demand" oxygen from the water; Total Suspended Solids (TSS) which is a measure of suspended particulates in the wastewater; and Total Nitrogen, which is the measure of the amount of Nitrogen in the wastewater. These constituents are regulated by the CVRWQCB in the specific WDR.

Analysis of wastewater effluent produced by individual residences for the constituents of concern noted above have been evaluated for the proposed project under the two conditions for wastewater disposal noted in the *Grey Water* section, above. In the case of Condition #1 (where no grey water is diverted), the wastewater strength is assumed to be within the range of typical residential wastewater with BOD of 200 milligrams/liter (mg/l), TSS of 75 mg/l, and Total Nitrogen ranging from 40-60 mg/l. At 33,200 gpd, this wastewater is diluted with grey water, so the typical residential strengths are considered the lower range values.

Condition #2 assumes all homes will be diverting the grey water flow (approximately 40% of total) making the resulting wastewater effluent stronger, meaning it would have higher constituent of concern values due to the overall volume of wastewater being lower (approximately 19,920 gpd). Since the wastewater won't be diluted, strengths would be higher values, assumed to be approximately 400 mg/l for BOD, 75 mg/l for TSS and a range of 80-100 mg/l for Total Nitrogen.

Since Condition #2 has the highest wastewater strength factors, these values have been used for the engineering design of the community wastewater treatment system for the proposed project.

Community Collection System

Effluent from the individual septic tanks will flow from the pressure sewer service lateral into a small diameter (2 inches to 4 inches in size based on location of the main in relation to the overall system) pressurized sewer main located in the street right of way. The sewer main, as well as pressure sewer service laterals from main to the edge of the street right of way will be constructed by the project developer at the time of street construction. Access ports will be located along the sewer main as necessary to facilitate maintenance. Air relief with carbon odor control filters will be located as necessary along the sewer main.

The proposed project has been designed so that the entire wastewater collection system, including septic tanks, be constructed to exacting watertight standards to prevent the inflow of unintended storm water and the possible discharge of untreated wastewater. All construction must be inspected and approved by the CSD with applicable permits from Shasta County.

Community Wastewater Treatment System

The wastewater treatment facility will be centrally located. It will be approximately 0.25 acre in size and will be fenced for security. The facility will include a controls/storage building approximately 12 feet by 15 feet in size. This building will have a restroom and will house the treatment system controls, the disinfection system, record keeping work station, safety equipment, maintenance equipment and miscellaneous storage.

The treatment system will be designed to meet the water recycling requirements for discharge of California Title 22 Disinfected secondary-23 recycled water (Title 22 Code of Regulations - Division 4. Environmental Health - Chapter 3. Water Recycling Criteria – Article 1 Definitions - §60301.225. Disinfected secondary-23 recycled water). Title 22 requires daily testing for coliform, which is the responsibility of the CSD (Title 22 Code of Regulations - Division 4. Environmental Health - Chapter 3. Water Recycling Criteria Article 6 - §60321. Sampling and analysis.) The system controls will have remote monitoring capability with automatic alarms and automatic diversion of flow if the effluent discharge does not meet minimum requirements. Effluent constituents that will be monitored will include turbidity, Oxidation Reduction Potential (ORP), and Chlorine Residual, in addition to others mandated by the WDR issued for the project by the CVRWQCB.

The treatment system will include flow equalization and emergency storage of treated effluent for the purposes of flow equalization to the dispersal areas, distribution and dispersal area maintenance activities, etc. Storage will be by means of any combination of above ground tankage, subsurface tankage at the treatment site and/or at the drip dosing tank sites. Secondary treatment will occur through Orenco AXMAX units installed in phases as the wastewater flow increases. AXMAX units lend themselves to phased projects with their operational mode of attached growth and being passively aerated. This gives this technology the ability to effectively and consistently treat wastewater in low flow conditions during early stages of a phase. AXMAX units come in multiple sizes to accommodate project phasing. For illustration purposes, assuming the project is built out in six phases of equal home count. The Phase 1 would include the installation of the flow equalization tanks, control building, the first AXMAX treatment unit, and dosing, disinfection and monitoring equipment. The operational controls for the AXMAX units are adjusted as homes come on line in each phase. In the first phase, operational controls will be set for the low initial flow from the first home. This will include reducing number of cycles per day the unit is dosed and the recirculation ratio of AXMAX to match incoming wastewater flow and waste strength. As Phase 1 buildout progresses, the operational settings are adjusted as homes come on line.

Prior to Phase 1 build out, roughly 80% buildout of Phase 1, the Phase 2 AXMAX would be installed and brought one line. This Phase 2 installation would add pumping equipment to the equalization tank to deliver flows to the Phase 2 AXMAX. Control settings would be adjusted in the Phase 1 and Phase 2 AXMAX units to balance the flow to each of the AXMAX units. The Phase 2 AXMAX will be plumbed to the dosing tank and disinfection system. This will repeat for Phases 3 through 6. Chlorine disinfection will follow, including capacity for contact time and de-chlorination prior to dispersal.

Wastewater treatment has the potential to create noise and odor. Noise potential comes from the pumps and motors associated with the treatment process. The pumps typical to the treatment system proposed are submersible located in underground tanks and vaults. There is no noise discernable beyond the tanks. The only motor proposed is for standby power generation at the treatment building and only operates under very rare circumstances during power outages. While the Orenco AXMAX treatment units are aerobic, it is possible that overloaded conditions could result in anaerobic conditions occurring in the tanks, which could result in odor generation. To reduce any odor that might be generated under these conditions, the installation of carbon filters would eliminate the potential for odor escaping the sealed treatment pods.

Community Wastewater Dispersal System

Final dispersal of the system discharge to the soil will occur via shallow subsurface drip lines. Drip lines will be divided into multiple zones to minimize the effective loading rate to the receiving soil and to provide system redundancy, both of which are additional design safety factors. The drip zones will be located in wide street medians and the effluent will provide nominal irrigation to location appropriate native plants. This placement scheme minimizes the longitudinal soil application rate along the contour thereby eliminating shallow groundwater mounding potential, another design safety factor. Also, bracketing the dispersal zones with the adjacent roadways reduces the impact of rainfall during wet weather conditions and increases the effective soil application rate to the underlying receiving soil environment. The effective soil application at depth is less than 0.1 gpd per square foot.

Preliminary soil testing by the project proponent supports a conservative average soil application rate of 0.2 gpd per square foot of soil surface area. This results in a need to provide 166,000 square feet of original dispersal area plus an additional 166,000 square feet of replacement dispersal area. Drip emitters will be placed approximately six inches below finish grade to assure one foot minimum separation to the highest seasonal water table.

Drip zones will be grouped for redundant dispersal management. Each group will have a dosing tank sized to provide emergency storage, drip zone headworks, and automatic back-flush system. Back-flush liquid will return through the pressure sewer main to the treatment system. The project proponent has developed a detail titled “Drip Dispersal Schematic” that shows the proposed 24-foot wide street median where the drip dispersal zones will be located. The median will be bracketed by 14-foot wide paved travel lanes for a total street width of 52 feet. This is the effective width of the absorption field area. The system design also maintains a minimum of 2.0 feet of separation from groundwater.

Based on the design of the homeowner and community wastewater components, the treatment of wastewater at the community wastewater treatment plant and the community dispersal system, the proposed project would have an effective Nitrate-Nitrogen loading to the subsurface of 2.9 mg/l (based on the Hantzsche-Finnemore Equation) which is well below the State’s drinking water threshold of 10 mg/l.

Project Management-Operations, Maintenance and Monitoring (OM&M)

The proposed project has been developed so that the individual home wastewater system (both grey water and wastewater) would be constructed, operated and maintained by the individual home owners. Operations and maintenance of the sewer mains, community collection system, treatment system and dispersal system will be the responsibility of the CSD. As such, the CSD has all operations, maintenance and monitoring (OM&M) responsibilities for these system components. Based on the proposed

projects' wastewater system design, the wastewater system must be under the control of a State of California Certified Wastewater Operator, who meets the training, experience and certification requirements of the California Office of Operator, under the State Water Board. Based on the system designs, the proposed wastewater treatment system will require a Grade Level 3 operator.