

Chapter VII

Environmental Resources, Open Space and Conservation

A. INTRODUCTION

The physical urban development envisioned in Chapter III must consider certain environmental resource issues. Environmental resources addressed in this chapter include: the “local open space plan,” as required by the State Government Code; geology and soils; agriculture; wildlife and other natural resources; archaeological and cultural resources; noise; air quality; and, energy conservation.

B. LOCAL OPEN SPACE PLAN

Open space needs are broadly identified by the state legislature. It is within this scope that local jurisdictions must identify specific areas and targets of preservation, development, and/or production. The State Government Code lists six (6) broad categories to be designated on a local open space plan: Open space for 1) the preservation of natural resources, 2) public health and safety, 3) managed production of resources, 4) outdoor recreation, 5) buffer zones to military activities, and 6) protection of places, features, and objects. These categories will be discussed in detail as they relate to the Modesto Urban Area.

1. Open Space for the Preservation of Natural Resources

State law defines this as including, but not limited to, areas required for the preservation of plant and animal life including habitat for fish and wildlife species; and areas required for ecologic and other scientific study purposes: rivers, streams, bays, estuaries, coastal beaches, lakeshores, banks of rivers and streams, and watershed lands. The Modesto Urban Area contains three such areas of preservation of natural resources: the Stanislaus River, Tuolumne River, and Dry Creek.

All three of these waterways are proposed to be acquired and maintained as Regional Parks. Chapter III of this General Plan presents detailed policies, in the form of Comprehensive Planning Districts, for the development of these three parks.

2. Open Space for Public Health and Safety

Open space for public health and safety includes, but is not limited to, areas that require special management or regulation because of hazardous or special conditions such as earthquake fault zones, unstable soil areas, floodplains, watersheds, areas presenting high fire risks, areas required for the protection of water quality and water reservoirs, and areas required for the protection and enhancement of air quality.

Beginning on page VII-28, below, this Chapter presents information and policies to address the issues raised in the above state statute. More specifically there is not an earthquake fault beneath the Modesto Urban Area, and there are also not significant opportunities for landslides, volcanic

hazards, erosion, or expansive soils. Designated floodways have been established on both Dry Creek and the Tuolumne and Stanislaus Rivers, and permits are required from the State Reclamation Board before any construction is approved. The Building Code regulates all construction in these areas. The Tuolumne River Regional Park and Dry Creek Park contribute to preservation of the floodway.

3. Open Space for Managed Production of Resources

The Government Code includes, but is not limited to, the following kinds of land used for managed production of resources: forest lands, rangeland, agricultural lands and areas of economic importance for the production of food or fiber; areas required for recharge of groundwater basins; bays, estuaries, marshes, rivers, and streams that are important for the management of commercial fisheries; and areas containing major mineral deposits, including those in short supply.

The Modesto Urban Area has two areas in which the managed production of resources is important: recharge of the groundwater basin and agricultural lands. Groundwater has traditionally been used by the City of Modesto (City) for its domestic, commercial, and industrial needs. With the City's continued growth, this has led over the years to overdrafting of the groundwater basins. As a result, the City of Modesto has undertaken several steps to stabilize the groundwater basins. Policies to address groundwater stabilization are found in Section VI-D. Agricultural issues are presented in more detail in Section VII-D, below.

4. Open Space for Outdoor Recreation

Government Code defines open space for outdoor recreation to include, but not be limited to, areas of outstanding scenic, historic, and cultural value; areas particularly suited for parks and recreation purposes, including access to lakeshores, beaches, and rivers and streams; and areas that serve as links between major recreation and open-space reservations including utility easements, banks of rivers and streams, trails, and scenic highway corridors. Section VI-D of this General Plan focuses on the City's neighborhood and community park system as the major source of outdoor recreation opportunities in the City.

5. Open Space for the Protection of Places, Features, and Objects

State law defines this as open space for the protection of places, features, and objects as described in Sections 5097.9 and 5097.993 of the Public Resources Code. Willful damage or destruction of Native American sacred places, objects and/or burial grounds is a misdemeanor.

6. Open Space Policies—Parks

- a. Figure VI-D-1 presents the existing (2014) park system. Section VI-D.2 presents a variety of policies applying to parks within the Baseline Developed Area.
- b. Within the Planned Urbanizing Area, develop new parkland and open space through the application of specified performance standards presented in Section VI-D.3.

- c. The regional park systems for Dry Creek and the Stanislaus and Tuolumne Rivers are defined in Chapter III, as follows: the Stanislaus River Comprehensive Planning District; the Tuolumne River Comprehensive Planning District; and, the Dry Creek Comprehensive Planning District.

7. Open Space Policies—River Greenway Program

The State Lands Commission holds a fee ownership in the bed of the Stanislaus and Tuolumne Rivers between the two ordinary low water marks. The entire rivers between the ordinary high water marks are subject to a Public Trust Easement. Both easement and fee-owned lands are under the jurisdiction of the State Lands Commission (Public Resources Code Sections 6301 and 6216). Use of lands underlying the state’s easement must be consistent with Public Trust needs in the area. In addition, the state may have a sovereign interest in Dry Creek. Due to staff limitations of the State Lands Commission, a study of this area to define the precise nature and extent of the state’s interest has not been done. However, the California State Parks Department is interested in providing additional recreational opportunities with the support of local jurisdictions.

The California State Parks Department’s Central Valley Vision Report was completed in 2007. The report provides recommendations to develop additional recreational opportunities in the Central Valley, including the City of Modesto. One of the recommendations of the report is to significantly expand recreational opportunities, programs, and services and preserve resources – particularly along river corridors. The Central Valley Vision Report identified the Tuolumne River as one of its four rivers of significant interest.

State Lands Commission staff believes that the general plan update is an excellent opportunity to incorporate public trust resource protection values and, specifically, a greenway concept. The City Parks and Recreation Director agrees with State Lands Commission staff; therefore, the following policies, collectively referred to as the “River Greenway Program,” are adopted to guide the development of parkland within the Dry Creek, Stanislaus River, and Tuolumne River Comprehensive Planning Districts (see Chapter III):

- a. Visual corridors of the river will be protected and enhanced.
- b. Visual corridors and access points on the riverfront will be recreated through redevelopment.
- c. Identifiable park entrances will be created. A comprehensive program of park signage and graphics will be developed.
- d. Adequate circulation throughout the park will be provided in order to accommodate pedestrians, bicyclists, and vehicles, as well as equestrians and boaters, if appropriate. Opportunities for park access via public transportation will be provided.
- e. Active and passive recreational areas with universal access will be created.
- f. Vehicular and pedestrian connections to the park that are direct and user-friendly will be provided.
- g. Adequate parking for park activities will be provided.

- h. A continuous trail linkage will be provided throughout the park that includes a range of experiences.
- i. Public access points and linear foot and bike paths will be incorporated into residential redevelopment as discussed in the Non-Motorized Transportation Master Plan.
- j. Riverfront vegetation will be consistent with riparian habitat zones.
- k. Environmentally sensitive habitat areas shall be protected against any significant disruption of habitat values, and only uses dependent on such resources shall be allowed within such areas (e.g., nature education and research; fishing and habitat protection).
- l. Sensitive habitats and natural areas, including wetlands and riparian corridors, will be protected and enhanced, when feasible.
- m. Existing wildlife habitat areas will be protected and enhanced, when feasible.
- n. Aquatic species and habitat will be protected and enhanced, when feasible.
- o. The natural forces influencing the development of recreational areas, including potential flooding, prevailing winds, sun orientation, and topography will be considered during design.
- p. A flood management program that provides protection from catastrophic flooding and contributes to the ecological values of the river corridor will be promoted.
- q. The scenic resources of Public Trust lands and resources shall be considered and protected as a resource of public importance. Permitted development shall be sited and designed to protect scenic views associated with Public Trust lands and resources.
- r. Areas to accommodate multiple purposes and changes in recreational preferences over time will be developed.
- s. Park and trail systems will be expanded as land becomes available.
- t. Adequate support facilities for recreational activities will be developed.
- u. Historical and archaeological resources will be preserved and protected, when feasible. The locations of archaeological resources will not be disclosed to the public.
- v. Support the California State Parks Department's efforts to provide additional recreational opportunities within the City.
- w. Support the findings and recommendations discussed within the California State Parks' Central Valley Vision Report as well as subsequent studies that pertain to the city.

8. Implementation

- a. The Neighborhood and Community Parks implementation programs are presented in Chapter VI.
- b. The Tuolumne River Regional Park Master Plan (TRRP) and the Master Environmental Impact Report are the guiding documents for the development and use of TRRP-controlled lands in the Tuolumne River and Dry Creek CPDs.
- c. The Regional Park system consisting of Dry Creek, Stanislaus River, and Tuolumne River shall be developed through the “Comprehensive Planning District” process outlined in Chapter III. The River Greenway Program policies (Section VII-B.7, above) should be incorporated into each of these three CPDs by including the following design elements:
 - (1) A riparian protection, restoration, and maintenance plan.
 - (2) A Riverfront Greenway trail element identifying access points and interconnection with any appropriate pathway programs.
 - (3) Dedication requirements to guarantee access is permanent (e.g., dedication of fee, easement, or deed restriction).
 - (4) A maintenance and operations element specifying how trails and accessways shall be maintained and operated and by what agency.
 - (5) A trail / accessway standards element specifying standards including minimum width of trails, trail surface, etc. consistent with state and federal law and state standards, and as outlined in the City of Modesto’s Non-Motorized Transportation Plan.
- d. Any action by a county or city by which open space land or any interest therein is acquired or disposed of or is restricted or regulated, whether or not pursuant to this part, must be consistent with the local open space plan (Section 65566, Government Code).

C. SOILS AND GEOLOGIC RESOURCES

1. Overview

This section deals with soils and other geologic features as resources. This section deals with soils and geologic features as hazards, and is intended to comply with Section 65302(d) regarding “...the conservation, development, and utilization of...soils.”

In the San Joaquin Valley, the Modesto Formation is comprised of ancient alluvial fans of the San Joaquin River and can be divided into upper and lower members. The upper member is composed primarily of unconsolidated, unweathered, coarse sand and sandy silt. The lower member is composed of consolidated, slightly weathered, well-sorted silt and fine sand, silty sand, and sandy silt. Pleistocene-age alluvial deposits of the Modesto Formation are known to contain paleontological resources.

The alluvial fan soils in the area of Modesto are highly suitable for agriculture. The soils are composed of materials derived from Sierran granitic terraces. The following soils found in the Modesto area are particularly suited to agriculture:

Chualar Series

These soils are moderately well drained and moderately coarse textured. They are on smooth, very gently sloping to nearly level relief. Many areas of these soils are in the vicinity of Modesto, especially to the north and northwest. They are important for growing a wide variety of orchard, vineyard, field, and forage crops. Yields are good to excellent.

Dinuba Series

These soils are imperfectly drained and moderately coarse textured. They are very gently sloping to nearly level. They are found north and northwest of Modesto. These soils are largely cultivated. They are mainly used for irrigated pasture and grain and vine crops.

Hanford Series

These soils are well drained and moderately coarse textured. They have smooth, very gentle slopes. They are along the Stanislaus and Tuolumne Rivers and on broad alluvial fans in the Modesto vicinity. These are important soils for the production of a wide variety of irrigated orchards and field and truck crops.

Modesto Series

These soils are moderately well drained, medium and moderately fine textured. They occur on nearly level areas where runoff is very slow. They are found north and northwest of Modesto. These soils are used for a wide variety of field crops and for orchards and vineyards.

In addition to soil resources, aggregate sand and gravel resources are found along the Stanislaus River. A surface mining operation for aggregate existed near the Stanislaus River at the northwestern corner of the General Plan area, but ceased operation in 1966. This site has since been converted into a concrete aggregate recycling operation.

No specific policies are proposed in this section. Policies for soils resources as they relate to agricultural production can be found in Section VII-D, below.

D. AGRICULTURE RESOURCE POLICIES

1. Overview

As in other parts of the Central Valley, Modesto is located in the center of rich agricultural lands. This means that urban expansion almost inevitably results in conversion of agricultural land to urban uses. The General Plan Land Use Diagram and policies define the long-term edge between urban and agricultural activities. Most of the agricultural land in the General Plan Area is found outside Modesto's corporate limits. A wide variety of crops is grown. Predominant among them are fruits and nuts, with almonds representing a major share.

Almost all farmland in the General Plan Area is rated by the California Department of Conservation as either “Prime” or “of Statewide Importance” (see Figure 4-1, “Important Farmland,” in the Master Environmental Impact Report). The MEIR presents a detailed analysis of the characteristics of this farmland. Prime Farmland is the most suitable for a variety of agricultural uses based on soil characteristics, irrigation, and other indicators. Farmland of Statewide Importance is distinguished from Prime Farmland because it is less desirable with respect to rooting depth, permeability, salinity or alkalinity, and/or erosion hazard. These classifications do not provide information about actual productivity of the land, which is also affected by availability of irrigation water, and the use of agricultural management techniques. Many valuable commodities (for example, milk) are produced in areas with relatively poor soils.

2. General Agriculture Resource Goal

- a. Minimize the loss of agricultural land by having future development be relatively compact and of reasonably high density.

3. Agriculture Policies—Baseline Developed Area

- a. If a subsequent project is within the Baseline Developed Area or Downtown Area as identified on the General Plan Growth Strategy Diagram (Figure II-1), consider the project to have minimal effect on the conversion of agricultural lands, and no mitigation for that impact will be required.

4. Agriculture Policies—Planned Urbanizing Area

The following policies apply to new development proposed in the Planned Urbanizing Area:

- a. Do not annex agricultural land unless urban development consistent with the General Plan has been approved by the City.
- b. Support the continuation of agricultural uses on lands designated for urban uses until urban development is imminent.
- c. Encourage the County to retain agricultural uses on lands surrounding the General Plan area and on lands within the General Plan area pending their annexation to the City or development by mutual agreement with the County.
- d. Where necessary to promote planned City growth, encourage development of those agricultural lands that are already compromised by adjacent urban development or contain property required for the extension of infrastructure or other public facilities, before considering urban development on agricultural lands that are not subject to such urban pressures.
- e. For any subsequent project that is adjacent to an existing agricultural use, the project proponent may incorporate measures to reduce the potential for conflicts with the agricultural use. Potential measures to be implemented may include the following:

- (1) Include a buffer zone of sufficient width between proposed residences and the agricultural use.
 - (2) Inform residents about the possible exposure to agricultural chemicals.
- f. Require development projects to comply with current LAFCo policy(ies) regarding preservation of agricultural resources.

E. WILDLIFE AND OTHER NATURAL RESOURCES

1. Overview

This section is intended to comply with Section 65302(d) of the Government Code regarding “...conservation, development, and utilization of natural resources including...wildlife...and other natural resources....”

The Modesto Urban Area hosts a variety of natural and altered habitats supporting a diverse assemblage of plant and animal species. Many of these species depend upon natural areas and linkages between natural areas for their survival. Other species are well-adapted to, and proliferate in, urban areas. This second category of species may have deleterious impacts on native, sensitive, and other species that may lead to the reduction of biological diversity.

Eight (8) habitat types, four (4) natural and four (4) altered, supporting various plant communities and wildlife, have been identified within the City of Modesto’s urban area:

- Valley Foothill Riparian
- Riverine
- Wetland
- Grassland
- Pasture
- Cropland
- Orchard-Vineyard
- Urban

Figure V-7-1 (Riparian and Vernal Pool Locations) in the MEIR presents areas of the Modesto Urban Area where there is the greatest potential to impact wildlife and other natural resources.

2. Policies in the Baseline Developed Area

- a. For proposed development consistent with the adopted Urban Area General Plan on lands within the Baseline Developed Area and Downtown Area, exclusive of lands within the Dry Creek and Tuolumne River Comprehensive Planning Districts, no further biological study is warranted unless habitat is present or if specific information concerning the known or potential presence of significant biological resources is identified in future updates of the California Natural Diversity Database, or through formal or informal input received from resource agencies or other qualified sources.

3. Policies in the Planned Urbanizing Area

Incorporate the following measures into Environmental Impact Reports for Specific Plans in the Planned Urbanizing Area:

- a. For all lands within the Planned Urbanizing Area, conduct site-specific surveys, by a qualified biologist, to determine whether any sensitive natural communities or species are present within the proposed development area. These studies focus on proposed development within any lands included within a potential biological resource study area, as delineated on Figure V-7-1 in the MEIR. Prior to considering development applications, coordinate with the USFWS and CDFW regarding listed species and potential for impacts. Employ the measures recommended by the USFWS and/or CDFW to avoid an incidental take.

Conduct surveys at the appropriate season to best determine the likelihood of occurrence and employ accepted methodologies as determined by USFWS and CDFW. Record the significant results of such surveys onto the City's existing biological resources map for future planning purposes.

- b. Avoid and preserve all areas occupied or potentially occupied by special-status species, where feasible. Protect areas that can be avoided by fencing, signage, or establishment of buffer zones appropriate to the species and/or habitat involved. Generally, a minimum 100-foot buffer of undeveloped land would be necessary. Improve this buffer area through sustainable habitat restoration. Require the protected habitat to be managed so as to contribute to the long-term conservation of the species and ecosystems on which they depend.

Where state and/or federally listed species are determined to be present, consult with the USFWS and/or CDFW in accordance with the California and/or federal Endangered Species Acts to determine mitigation measures to avoid and minimize impacts to those species. If other special-status species are determined to be present and cannot be avoided, then implement species-specific mitigation measures to minimize impacts on those species through informal consultation with USFWS and/or CDFW. Incorporate the mitigation measures and other recommendations of these agencies into the development plan.

- c. Additional measures to protect sensitive habitats may be implemented. Potential measures to be implemented may include measures listed in Table V-7-1 in the Final Master Environmental Impact Report.

F. ARCHAEOLOGICAL AND CULTURAL RESOURCES

1. Overview

Cultural resources is a general term that includes many types of physical remains of past human activities as well as other types of resources important to Native Americans and other ethnic groups. Cultural resources include prehistoric and historical archaeological remains, historical architectural remains including buildings and structures and other features of the built environment, and places of importance to Native Americans.

Prehistoric archaeological resources include material remains indicating the presence of Native Americans. Material remains include artifacts, which were made, used, or altered by people, such as lithic material, groundstone, discarded artifacts, and human remains. These are often found in midden deposits, a rich organic dark brown soil that contains charcoal, ash, and food waste, but they may also be found individually, isolated from other archaeological remains. Intermittent use of an area by Native Americans can also be seen in lithic (stone) scatters, and food processing sites such as bedrock mortar sites or areas with mortars and pestles. Burial grounds or cemeteries are often associated with habitation. Figure V-7-1 in the Master Environmental Impact Report presents areas of the Modesto Urban Area where there is the greatest potential to impact archaeological and cultural resources.

A number of resources have been identified within the Modesto Urban Area and environs. Specifically, four sites have been recorded at the Central California Information Center, Turlock, California. These areas include habitation sites, burials, and artifacts concentrations, and they are located near the Stanislaus and Tuolumne Rivers, Dry Creek, and terraces above waterways. However, information on prehistoric cultural resources in the Modesto Urban Area is limited and is often obtained as a result of development or other proposed activities where archaeological research is required. Agricultural use, grazing, and urban expansion tend to erase cultural resource evidence.

Historic archaeological resources include remains of human activities in the historical period, when non-Native Americans entered the area. Historical archaeological remains include a wide variety of remains including trash deposits and scatters, building foundations, mining remains, remains of farms and ranches, and roads and trails, to name a few.

Historical architectural resources generally include structures (residential, commercial, civic, farm, ranching) relating to historic occupation of an area. In the Modesto Urban Area, known or identified historic architectural resources are primarily found within the urban area. Many of these architectural resources have been placed on various preservation lists. A number of historic properties within the City of Modesto have been listed on the National Register of Historic Places (NRHP), the California State Points of Historical Interest, and the City of Modesto Landmark Preservation Sites list. Some of the NRHP-listed properties and city landmarks are eligible for the California Register of Historical Resources (CRHR), but no formal steps have been taken to nominate them. Six (6) properties have been listed on or have been determined eligible for the NRHP, and more than 100 properties are listed on the Directory of Determination of Eligibility (1990) for the NRHP. The City of Modesto's Landmark Preservation List, Figure VII-1 (2007), includes 59 entries including buildings, structures, objects and natural features of local importance.

2. Policies in the Downtown Area and Baseline Developed Area

- a. Implement regulations that identify important historic resources, and preserve the important aspects of those resources. Encourage adaptive reuse of National Register of Historic Places (NRHP), California Register of Historical Resources (CRHR) eligible or potentially eligible buildings, and local landmarks, including historically sensitive restoration.
- b. Perform restoration and renovation of landmark buildings in accordance with the "Secretary of the Interior's Standards for the Treatment of Historic Properties" and the State Historic Building Code. The standards serve as guidelines for rehabilitation, restoration, preservation, retaining, and preserving the historic character of a property.

- c. Ensure that zoning provisions for structures of historical significance are sufficiently flexible to ensure that parking or other structures requirements of the Zoning Ordinance allow the historic structures to remain viable in the future.
- d. The modification of historic structures and places can be mitigated through the application of existing regulations and consultation with the State Historic Preservation Officer (SHPO), an interim procedure whereby the City evaluates proposals to modify historic structures and the proposed program(s) to reduce the impacts, if any, to a less-than-significant level in accordance with CEQA Guidelines §15064.5. If an historical resource evaluation has not been prepared for any such proposal, prepare one for the purpose of determining whether the proposed mitigation would reduce the impacts to a less-than-significant level. If the project appears to have impacts on eligible or potentially eligible structures, the project proponent will resolve adverse effects through consultation with the SHPO.
- e. When structures or areas of historical significance more than 50 years old are proposed for demolition or alteration, or where construction is proposed on a property adjacent to that structure or area and within 100 feet of it, the property owner is to submit data to the City that has been prepared by a qualified architectural historian regarding the structure's history or locations. Evaluate the historical significance of the proposal and require policies to be implemented to preserve all structures and places deemed historically significant.
- f. Maintain professional standard inventories of historic resources, with the findings of those inventories concurred by the SHPO and kept on file with the State Office of Historic Preservation. The records provide a preliminary assessment of eligibility at the initial study stage to indicate whether CEQA regulations would apply in the case of a project application or whether the resource has previously been determined ineligible. When no previous survey has been conducted, or an historical context prepared, buildings and structures more than 50 years old, and/or otherwise potentially significant, must be evaluated by a professional historian or architectural historian prior to project approval to determine whether the resource is a historically significant resource, for purposes of CEQA.
- g. When a landmark is established, have the the character-defining elements of the landmark identified by a qualified architectural historian, qualified City staff member, or other professional qualified under Secretary of Interior Standards to convey the historic significance of the property and to facilitate review of future changes and the identification of potentially significant impacts to the property. Actions or activities that follow Secretary of Interior Standards, in consultation with SHPO, can be considered to have mitigated any potential adverse impacts to a less than significant level.
- h. When proposed development lies within an archaeological resource study area (shown on Figure V-7-1 in the Master EIR), analyze the area to determine whether it has a high potential to have been used by Native Americans or contain prehistoric deposits. Resources to be utilized include archival research through the Central California Information Center at CSU Stanislaus, preliminary surface field reconnaissance, consultations with the Native American Heritage Commission (NAHC) and individuals and organizations identified by the NAHC. Any archaeological resources discovered shall be recorded and mapped. Require an evaluation of the significance of any such resources only when proposed development might affect the resources.

- i. If land designated or proposed to be designated for development is discovered through archival research, consultation or by chance, to contain a sacred or traditional place, consult with the NAHC and the appropriate Native American groups and individuals for the purpose of determining the level of confidentiality required to protect the cultural place and for the purpose of developing treatment with appropriate dignity of the cultural place in any corresponding management plan. Avoid and preserve sacred sites whenever feasible.
- j. Consistent with AB 52 of 2016, conduct consultations with the Native American Heritage Commission and the appropriate Native American Tribes for the purpose of determining the level of confidentiality required to protect identified cultural place(s), if any, and for the purpose of developing treatment with appropriate dignity of said cultural place(s) in any corresponding management plan. Avoid and preserve sacred sites whenever feasible.
- k. For any project that involves earth-disturbing activities within the archaeological resource study area, or on a site determined to be archaeologically or culturally sensitive by City staff through consultation with Native American tribes or bands and a qualified archaeologist, require the project applicant to implement the following mitigation measures, at a minimum:
 - (1) Where excavation or construction would occur outside of areas where development has occurred, or where excavation / construction would occur at depths greater than existing foundations, roads, and/or trenches in the immediate vicinity, evaluate the site via a qualified archaeologist retained by the project applicant. Said evaluation would include at minimum a records search, a Phase I pedestrian survey, and preparation of an archaeological report containing the results of this cultural resources inventory identification effort for submittal to the Central California Information Center. If a Phase II archaeological evaluation is recommended, complete a report of the survey and any excavations with recommendations prior to project approval;
 - (2) In the event of the discovery of a burial, human bone, or suspected human bone, immediately halt all excavation or grading in the vicinity of the find and protect the area of the find. The project applicant shall immediately notify the Modesto Police Department and County Coroner of the find and comply with the provisions of California Health and Safety Code Section 7050.5, including California Public Resources Code Section 5097.98, if applicable. If human remains are identified, also retain a Native American monitor at the applicant's expense;
 - (3) A qualified archaeological monitor will be present and will have the authority to stop and redirect grading activities, in consultation with the Native Americans and their designated monitors, to evaluate the significance of any Native American archaeological resources discovered on the property; and,
 - (4) Relinquish ownership of all Native American human remains and/or artifacts that are found within the project area, to the appropriate Native American Most Likely Descendent (MLD), as assigned by the Native American Heritage Commission, for proper treatment and disposition. The MLD will decide whether or not standard archaeological analysis will be allowed on human remains and associated artifacts from burials.

- (5) If paleontological resources are discovered during earth-moving activities, the construction crew shall immediately cease work in the vicinity of the find, and the City's Planning Manager shall be notified. A qualified paleontologist shall evaluate the resource and prepare a proposed mitigation plan in accordance with Society of Vertebrate Paleontology guidelines. The proposed mitigation plan may include a field survey of additional construction areas, sampling and data recovery procedures, museum storage coordination for any specimen recovered, and a report of findings. Recommendations determined by the lead agency to be necessary and feasible shall be implemented before construction activities can resume at the site where the paleontological resources were discovered.
1. Whenever possible, avoid disturbing or damaging archaeological resources. Preservation in place to maintain the relationship between the artifacts and the archaeological context is the preferred manner of mitigating impacts to archaeological sites. Preservation may be accomplished by:
- (1) Planning construction to avoid archaeological sites;
 - (2) Incorporating sites within parks, green space, or other open space;
 - (3) Covering the sites with a layer of chemically stable soil; and/or,
 - (4) Deeding the site into a permanent conservation easement.

When in-place mitigation is not feasible, data recovery through excavation may be necessary. A data recovery plan, which makes provisions for adequately recovering the scientifically consequential information about the site, shall be prepared and adopted prior to any excavation being undertaken. Such studies must be deposited with the Central California Information Center in Turlock, California. Special rules apply to any archaeological sites known to contain human remains (Health and Safety Code Section 7050.5; Guidelines Section 15126.4(b)).

Data recovery shall not be required if the lead agency determines that testing or studies already completed have adequately recovered the necessary data, provided that the data have already been documented in another EIR and are available for review at the California Historical Resource Regional Information Center (Guidelines Section 15126.4(b)).

- m. Allow reasonable time for the qualified archaeologist to notify the proper authorities for a more detailed inspection and examination of the exposed cultural resources. During this time, excavation and construction would not be allowed in the immediate vicinity of the find; however, those activities could continue in other areas of the project site.
- n. If any find is determined to be significant by the qualified archaeologist, representatives of the construction contractor and the City, the qualified archaeologist, and a representative of the Native American community (if the discovery is an aboriginal burial) will meet to determine the appropriate course of action.
- o. All cultural materials recovered as part of a monitoring program are subject to scientific analysis, professional museum curation, and a report prepared according to current professional standards.

3. Policies in the Planned Urbanizing Area

Policies for the Planned Urbanizing Area include those presented for the Baseline Developed Area, above, and those shown below.

- a. Any project subject to CEQA that involves substantial earth-disturbing activities should require consultation by the applicant for the purposes of determining archaeological and cultural resources impacts and creating appropriate mitigation to address such impacts.
- b. Any project that involves earth-disturbing activities within previously undisturbed soils in an area determined to be archaeologically or culturally sensitive by the City of Modesto through consultation with Native American tribes or bands and a qualified archaeologist should be subject to archaeological and Native American monitoring during all ground-disturbing activities.
- c. Any project that involves earth-disturbing activities within previously undisturbed soils in an area determined to be archaeologically or culturally sensitive by the City of Modesto through consultation with Native American tribes or bands and a qualified archaeologist should be required to carry out the following mitigation measures, at a minimum:
 - (1) If prehistoric archaeological remains are discovered during project construction (inadvertent discoveries), all work in the area of the find shall cease, and a qualified archaeologist should be retained by the project sponsor to investigate the find, and make recommendations as to treatment and mitigation. In the event of the discovery of a burial, human bone, or suspected human bone all excavation or grading in the vicinity of the find should halt immediately and the area of the find should be protected and the project applicant immediately should notify the County Coroner of the find and comply with the provisions of California Health and Safety Code Section 7050.5, including California Public Resources Code Section 5097.98, if applicable. If human remains are identified, the project sponsor should also retain a Native American monitor;
 - (2) A qualified archaeological monitor should be present and should have the authority to stop and redirect grading activities, in consultation with the Native Americans and their designated monitors, to evaluate the significance of any Native American archaeological resources discovered on the property;
 - (3) Native American monitors from the appropriate Native American Tribes, as determined by the NAHC should be allowed to monitor all groundbreaking activities, including all archaeological testing and data recovery excavations that are likely to affect Native American resources, as determined by a qualified archaeologist. The project proponent should be responsible for compensating Native American monitors. If human remains are discovered, the NAHC should assign a Most Likely Descendent (MLD); and,
 - (4) The landowner agrees to relinquish ownership of all Native American human remains and associated burial artifacts that are found within the project area, to the appropriate Native American MLD, as assigned by the NAHC, for proper treatment and disposition. The MLD will decide whether or not standard archaeological analysis will be allowed on human remains and associated artifacts from burials.

- (5) If paleontological resources are discovered during earth-moving activities, the construction crew shall immediately cease work in the vicinity of the find, and the City's Planning Manager shall be notified. A qualified paleontologist shall evaluate the resource and prepare a proposed mitigation plan in accordance with Society of Vertebrate Paleontology guidelines. The proposed mitigation plan may include a field survey of additional construction areas, sampling and data recovery procedures, museum storage coordination for any specimen recovered, and a report of findings. Recommendations determined by the lead agency to be necessary and feasible shall be implemented before construction activities can resume at the site where the paleontological resources were discovered.

G. NOISE

1. Overview

California planning law requires every general plan to address local noise issues (Government Code Section 65302(f)). The noise element provides a guide for establishing a pattern of land uses that minimizes the exposure of community residents to excessive noise. The policies presented in this section were derived from mitigation measures established in the MEIR, which in turn recognized the guidelines established by the State Office of Noise Control (Department of Health Services).

Noise is part of everyday life in an urban community, resulting from either stationary or mobile sources. Stationary sources include noise generators such as the airport, loud music, and industrial and construction activities. Mobile noise sources are typically transportation-related, such as aircraft, trains, automobiles, trucks, buses, motorcycles, and construction vehicles. Construction noise is considered localized and temporary.

Sound intensity is measured in "A-weighted" decibels (dBA) that are weighted to correct for the relative frequency response of the human ear. Typical dBA sound levels for various types of noise sources are summarized in Table VII-1 and range from quiet to painfully loud.

Table VII-1. Weighted Sound Levels and Human Response

Noise Source	Sound level (dBA)	Response
Carrier deck jet operation	— 140 —	
Civil defense siren (at 100 feet)	— 130 —	Painfully loud
Jet takeoff (at 200 feet)	— 120 —	Threshold of feeling and pain
Riveting machine (at 1 foot) Rock music concert	— 110 —	
Pile driver (at 50 feet) Ambulance siren (at 100 feet)	— 100 —	Very loud
Heavy truck (at 50 feet)	— 90 —	
Pneumatic drill (at 50 feet) Freight train cars (at 50 feet) Garbage disposal in home Freight train cars (at 100 feet) Freeway traffic (at 50 feet) Vacuum cleaner (at 10 feet) Air conditioning unit (at 20 feet)	— 80 — — 70 — — 60 —	Moderately loud
Speech in normal voice (at 15 feet)	— 50 —	
Residence—typical movement of people, no TV or radio	— 40 —	Quiet
Soft whisper (at 5 feet)	— 30 —	
Recording studio	— 20 —	
	— 10 —	

Table VII-2 depicts “normally acceptable,” “conditionally acceptable,” “normally unacceptable,” and “clearly unacceptable” noise levels for various land use categories. These noise levels identify noise limitations for determining land use compatibility between a new development and neighboring uses. Table VII-2 utilizes the community noise equivalent level (CNEL), which is the time-varying noise over a 24-hour period with a weighting factor applied to noises occurring during evening and nighttime hours.

Table VII-2. Noise Compatibility Matrix

Land Use Category	Community Noise Exposure— L_{dn} or CNEL (db)						
	50	55	60	65	70	75	80
Residential: low-density single-family, duplex, mobile homes	█	█	█	█	█	█	█
Residential: multi-family	█	█	█	█	█	█	█
Transient lodging (hotel / motel)	█	█	█	█	█	█	█
Schools, libraries, churches, hospitals, nursing homes	█	█	█	█	█	█	█
Auditoriums, concert halls, amphitheaters	█	█	█	█	█	█	█
Sports arenas, outdoor spectator sports	█	█	█	█	█	█	█
Playgrounds, neighborhood parks	█	█	█	█	█	█	█
Golf courses, riding stables, water recreation, cemeteries	█	█	█	█	█	█	█
Office buildings (professional, business, commercial)	█	█	█	█	█	█	█
Industrial, manufacturing, utilities, agriculture	█	█	█	█	█	█	█
█ Normally Acceptable	Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.						
█ Conditionally Acceptable	New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features are included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning, will normally suffice.						
█ Normally Unacceptable	New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and noise insulation features included in the design.						
█ Clearly Unacceptable	New construction or development generally should not be undertaken.						

A Noise Contour Map (Figure VII-2) shows the typical noise levels resulting from significant noise sources around Modesto. CNEL is a commonly used noise contour metric. Figure VII-2 shows projected traffic noise levels resulting from General Plan continuing growth generated by traffic, the airport, and the railroad. The noise contour data is also provided in the MEIR. The Day-Night Average Sound Level (Ldn) used in Figure VII-2 is a 24-hour average of the sound levels with a 10-dB nighttime weighting factor applied to account for the general principle that nighttime noise is more annoying than daytime noise. All noise levels (dB) described in this section are considered to be A-weighted, unless otherwise identified.

2. Noise Sources

Major sources of continuous or occasional noise include:

- **Roadways, especially arterials and expressways**

Roadway noise is generally continuous throughout the day, tapering off in the evening. In the evening, noise from trucks, loud car stereos, emergency vehicles, and poorly muffled engines are especially noticeable. Typical noise ranges from 60 dB to 100 dB.

- **Railroads – Union Pacific, Burlington Northern-Santa Fe, and Modesto & Empire Traction**

Noise and vibrations from freight and passenger rail occurs throughout the day and night, which can be very disruptive. Due to federal regulations, train horns must be sounded at particular volumes and durations. It is possible to establish a ‘quiet zone’ in some circumstances to reduce – but not eliminate – train horn noise. Typical noise can range from 70 dB to 90 dB at a distance of 100 feet.

- **Modesto City-County Airport**

Aircraft noise can occur at most hours of the day or night. Identifiable aircraft noise is negligible at a distance of more than two (2) or three (3) miles from the airport, but can be very significant and disruptive to nearby residences in the vicinity of the runway. CNEL volumes average about 60 dB at the eastern edges of the neighborhoods nearest to the airport. While CNEL averages noise levels, it should be noted that individual noise events, such as engine run-ups and takeoffs, can produce considerably higher short-term noise volumes.

Modesto’s hospitals provide medical evacuation services by helicopter which adds noise in the areas adjacent to those hospitals. Additionally, industry and domestic noise, such as a party, someone working on a car in their garage, and/or power tools, add to the noise environment.

3. Sensitive Receptors

Sensitive noise receptors are persons and facilities that could be adversely affected by noise. Sensitive receptors in Modesto include residences, hospitals, parks, churches, and schools. The following policies apply to development in all areas of the City.

- a. Construction activities are to comply with Modesto Municipal Code Title 4, Chapter 9.

- b. Implement noise-reducing construction practices as conditions of approval where substantial construction-related noise impacts would be likely to occur, such as with extended periods of pile driving, or where construction is expected to continue or where sensitive receptors would be affected by construction noise. Conditions of approval may include, but are not limited to:
 - Require construction equipment, including air compressors and pneumatic equipment to have properly maintained mufflers;
 - Require impact tools to be equipped with shrouds or shields;
 - Require that the quietest equipment available be used; and,
 - Require selection of haul routes that affect the fewest number of people.
- c. Implement techniques, where feasible, to reduce noise impacts from new or widened roadways. Such techniques may include, but are not limited to:
 - Traffic calming to reduce vehicle speeds, including narrowing travel lanes and limiting the number of motor vehicle lanes;
 - Adding bicycle and parking lanes to move the noise source farther away from sensitive receptors; and,
 - Use of earthen berms and landscaped walls to channel noise away from sensitive receptors.
- d. Use the most recent noise contour map (Figure VII-2) to implement the requirements of Noise Insulation Standards contained in Title 24 of the California Code of Regulations. Developers may be allowed to demonstrate that detailed noise studies and / or mitigation are not necessary due to local conditions, changes in the expected future noise environment, or inapplicable assumptions made in the Master EIR.
- e. Incorporate construction practices and acoustic treatment in new residential construction to reduce typical indoor noise levels to 45 dB. Developers of residential buildings within the 65 dBA contours shown in the General Plan Master EIR shall demonstrate that interior noise has been reduced to 45 dB. Other types of development should be protected against noise intrusion at least to the levels indicated on Table VII-2.
- f. For proposed non-transportation noise sources, reduce noise levels so as not to exceed the allowable noise exposure thresholds specified in Table V.3.9, below, at the property line of residential or other noise-sensitive land uses.

TABLE VII-3 Noise Exposure Thresholds – Non-Transportation Noise Sources

	Citywide, excluding Downtown		Downtown	
	Daytime (7:00am - 10:00pm)	Nighttime (10:00pm - 7:00am)	Daytime (7:00am - 10:00pm)	Nighttime (10:00pm - 7:00am)
Hourly L_{eq} , dBA	55	45	60	50
Maximum level, dBA	75	65	80	70

* Each of the noise level standards shall be reduced by five (5) dBA for pure tone noises, noise consisting primarily of speech or music, or for recurring impulsive noises. Where measured ambient noise levels exceed the standards, the standards shall be increased to the ambient levels.

** If the existing ambient noise level at the receiving use exceeds the thresholds given in Table V.3.9, then the noise level standards shall be increased to account for the ambient noise level.

- g. At noise-sensitive land uses, increases in noise should not exceed 3 dBA where any other noise threshold or standard would be exceeded, and/or 5 dBA where noise levels would otherwise fall within acceptable limits, for the existing conditions scenario as compared to the buildout scenario.
- h. Additional study and/or mitigation for outdoor recreation areas will be required if:
 - For single-family dwellings, noise exceeds 65 dBA L_{dn} in one or more backyards;
 - For multi-family dwellings, noise exceeds 65 dBA L_{dn} at common recreation areas, such as swimming pools or play areas or at private patios and balconies; or,
 - For other uses, noise exceeds the level considered “conditionally acceptable” as shown on Table VII-2.
- i. Limit trucking to specific routes, times, and speeds that avoid or minimize adverse effects on sensitive receptors.
- j. Airport and aircraft noise analysis will be conducted in accordance with the Modesto City–County Airport’s Master Plan and Federal Aviation Regulation (FAR Part 150). New construction must meet Modesto’s noise compatibility standards. As airport operations increase, mitigation will be provided to existing residential and other sensitive uses, either through operations or direct property improvements, in order to meet Title 14 Code of Federal Regulations Part 150 land use compatibility guidelines.
- k. Study, analyze and consider establishment of “Quiet Zones” along the rail corridors through downtown, along Yosemite Boulevard and along the east side of the planning area.
- l. For new residential development proposed in areas within 200 feet of the center of the near mainline of active rail lines where single-event noise from trains is of concern, demonstrate that the proposed development will incorporate measures to reduce maximum noise levels generated during train passbys to 50 dBA L_{max} or less inside bedrooms and to 55 dBA L_{max} or less inside other noise sensitive occupied areas.
- m. For new residential and vibration sensitive commercial development (including but not limited to lodging facilities, hospitals and similar uses) located within 200 feet of the center of the near mainline of active rail lines, demonstrate that the proposed development will incorporate measures to reduce vibration levels generated during train passby events to meet the FTA vibration criteria as shown in Master EIR Table V-3-6.
- n. For construction activities involving high-powered vibratory tools or pile driving within 200 feet of an existing structure, demonstrate that project construction would not exceed the Caltrans construction vibration thresholds to ensure that no damage to sensitive structures would occur.

H. AIR QUALITY

1. Overview

Local government’s responsibility for air quality increased significantly with the passage of the California Clean Air Act (1988) and the 1990 Amendment to the Federal Clean Air Act. Both of these pieces of legislation place new emphasis on reducing motor vehicle trips and vehicle miles traveled at the local level. Although the San Joaquin Valley Unified Air Pollution Control District is required to include transportation control measures and indirect source programs in its Air Quality Attainment Plan, cities and counties through their Councils of Government are responsible for most implementation.

Local government responsibilities for air quality are found in four areas: (1) land use planning; (2) reviewing and mitigating the environmental impacts of development projects; (3) developing and maintaining the transportation infrastructure in the community, including transit systems; and, (4) implementing local air quality programs such as commute-based trip reduction and rideshare. In order to assist cities in achieving these responsibilities, the San Joaquin Valley Unified Air Pollution Control District published, in 1994, a document entitled “Air Quality Guidelines for General Plans,” which was subsequently updated in 2005. Concurrently, the Master Environmental Impact Report utilized many of the recommended policies from this District publication, as a comprehensive set of principles designed to mitigate air quality impacts.

2. Air Quality Policies

Air Quality policies are distributed throughout the proposed General Plan amendment chapters, recognizing the comprehensive structure of this integrated policy document. The following Air Quality and Climate Change-related policies would apply throughout the UAGP planning area.

- a. Implement measures to reduce motor vehicle use and related ozone precursor and PM10 emissions through changes to the transportation infrastructure. Potential measures to be implemented may include those shown in Section V-2 of the Final Master Environmental Impact Report.
- b. Implement measures to reduce vehicle use and associated emissions related to existing and future land use development in the City of Modesto. Potential measures to be implemented may include those shown in Section V-2 of the Final Master Environmental Impact Report.
- c. Implement measures to reduce emissions associated with energy use by residences and businesses. Potential measures to be implemented may include those shown in Section V-2 of the Draft Master EIR.
- d. The City of Modesto recognizes the efforts of the San Joaquin Valley Air Pollution Control District to identify the cumulative transportation and air quality impacts of all General Plan amendments approved during the previous year. This measure is intended to track the effectiveness of current air quality-related programs and guide revision to these programs through periodic review of cumulative air quality impacts in the City.

The City of Modesto encourages employers to implement the following measures:

- (1) In-house matching services (for carpools and vanpools) at employers with over 100 weekday employees, or at large development sites occupied by several smaller employers, or coordination with Caltrans' "Commuter Computer" program;
- (2) Employer-based dissemination of commute information;
- (3) Employer subsidies for transit passes and incorporation of transit stop facilities into site design;
- (4) A program to guarantee rideshare participants a ride home in case of emergency;
- (5) Flex-time scheduling;
- (6) Site plan design that encourages pedestrian movement between adjacent land uses;
- (7) Incentives such as preferred parking for carpoolers;
- (8) Encouraging submission of site plans featuring mixed land uses or "neo-traditional" design; and,
- (9) Encouraging employers to experiment with telecommuting options, where feasible.

The following policies are intended to reduce air quality impacts through inter-agency coordination:

- e. Work with neighboring jurisdictions and affected agencies to address cross-jurisdictional and regional transportation and air quality issues.
- f. Coordinate with other jurisdictions and other regional agencies in the San Joaquin valley to establish parallel air quality programs and implementation measures (trip reduction ordinances, indirect source programs, etc.).
- g. Implement measures to reduce emissions associated with future development through the CEQA review process. Section V-2 of the MEIR describes those measures to be implemented, as well as additional measures that may be implemented at the discretion of the City.
- h. Consult with the SJVAPCD during CEQA review for discretionary projects with the potential for causing adverse air quality impacts.
- i. Consider supporting investment in geographic information system technology.

The following policies are intended to reduce air quality impacts through public outreach and education programs:

- j. Work to improve the public's understanding of the land use, transportation, and air quality link.
- k. Encourage local public and private groups to provide air quality education programs.

The following policies are intended to minimize exposure of the public to toxic air contaminants (TACs) and noxious odors from industrial, manufacturing, and processing facilities:

- l. Encourage new air pollution sources such as, but not limited to, industrial, manufacturing, and processing facilities to be located an adequate distance (based on pollutant dispersion characteristics, site orientation, prevailing winds, etc.) from residential areas and other sensitive receptors.

- m. Implement measures to reduce the temporary, yet potentially significant, local air quality impacts from construction activities. Potential measures to be implemented may include those measures shown in Section V-2 of Master Environmental Impact Report.
- n. Require residential development projects and projects categorized as sensitive receptors (hospitals, schools, convalescent homes, etc.) to be located an adequate distance from existing and potential sources of toxic and/or odorous emissions such as freeways, major arterials, industrial sites, refuse transfer or disposal sites, and hazardous material locations.

The following policies are intended to accurately determine and fairly mitigate the local and regional air quality impacts of projects proposed in the City of Modesto:

- o. Determine project air quality impacts using analysis methods and significance thresholds recommended by the SJVAPCD.
- p. Ensure that identified air quality impacts are consistently and fairly mitigated.
- q. Ensure all air quality mitigation measures are feasible, implementable, and cost effective.
- r. Identify the cumulative transportation and air quality impacts of all General Plan amendments approved during the previous year.
- s. Reduce the air quality impacts of development projects that may be insignificant by themselves, but cumulatively are significant.
- t. Encourage innovative mitigation measures to reduce air quality impacts by coordinating with the SJVAPCD, project applicants, and other interested parties.
- u. Review of new development shall be coordinated with SJVAPCD staff to ensure all projects subject to the SJVAPCD Rule 9510 (Indirect Source Review) comply fully with the rule. This rule fulfills the SJVAPCD's emission reduction commitments in the PM10 and Ozone Attainment Plans through emission reductions from the construction and use of development projects through design features and onsite measures. Rule 9510 applies to any applicant that seeks to gain a final discretionary approval for a development project, or any portion thereof, which meets certain minimum thresholds.
- v. A Construction Health Risk Assessment shall be required on a project-by-project basis if, at the direction of SJVAPCD after applicant consultation, the specific project is considered to have a potentially significant project-level health risk impact, through refined modeling using 2015 OEHHA guidance (or the latest accepted methodology), to identify impacts and, if necessary, include measures determined by SJVAPCD to reduce exposure.
- w. Future development that includes sensitive receptors (such as schools, hospitals, daycare centers, or retirement homes) located within the setback distances from highways, railroads, local roadways, and stationary sources specified below shall require site-specific analysis to determine the level of TAC and PM_{2.5} exposure. This analysis shall be conducted following methodology and procedures recommended by SJVAPCD and OEHHA. If the site-specific analysis reveals significant exposures, such as cancer risk greater than 20 in one million or acute or chronic hazards with a Hazard Index greater than 1.0, additional measures (described below) shall be required to reduce the risk such that the threshold is not exceeded.

Setback screening distances:

- a) Gasoline dispensing facilities: 300 feet for large facilities (3.6 million gallons of throughput a year or more) and 50 feet for smaller facilities;
- b) Dry cleaning facilities: 300 feet for facilities that emit Perchloroethylene;
- c) Distribution centers: 1,000 feet;
- d) Chrome platers: 1,000 feet;
- e) Freeways, urban roads with 100,000 vehicles/day or rural roads with 50,000 vehicles/day or more: 500 feet;
- f) BNSF rail line: 800 feet from 2020-2024, and 500 feet for 2025 and later; and,
- g) UP rail line: 200 feet east of the rail line and 300 feet west of the rail line from 2020-2024, and 100 feet east of the rail line and 200 feet west of the rail line for 2025 and later.

Future non-residential developments containing potentially significant TAC sources would be evaluated in consultation with SJVAPCD to ensure that they do not cause a significant health risk in terms of excess cancer risk greater than 20 in one million, or acute or chronic hazards with a Hazard Index greater than 1.0. This analysis shall be conducted following methodology and procedures recommended by SJVAPCD and OEHHA. If the site-specific analysis reveals significant exposures, additional measures shall be required as described below to reduce the risk to below the threshold.

If the analysis shows the cancer risk exposure is significant, then the project sponsor shall submit performance specifications and design details to demonstrate that lifetime residential exposures would be reduced to a level of less-than-significant under the applicable threshold subject to approval by the City. The specifications or design standards may include the following or other comparable measures:

- i. Install air filtration systems rated MERV-13 or higher and a maintenance plan for the air filtration system shall be implemented.
 - ii. Plant trees and/or vegetation between sensitive receptors and pollution sources, if feasible. Trees that are best suited to trapping particulate matter shall be planted, including the following: Pine (*Pinus nigra* var. *maritime*), Cypress (*X Cupressocyparis leylandii*), Hybrid poplar (*Populus deltoids X trichocarpa*), and Redwoods (*Sequoia sempervirens*).
 - iii. Design sites to locate sensitive receptors as far as possible from any freeways, roadways, diesel generators, distribution centers, and rail lines.
 - iv. Locate operable windows, balconies, and building air intakes as far away from these sources as feasible. If near a distribution center, residents shall not be located immediately adjacent to a loading dock or where trucks concentrate to deliver goods.
- x. Coordinate land use planning to prevent new odor complaints. Consult with SJVAPCD, as necessary, to identify the potential for odor complaints from various existing and planned or proposed land uses and development projects. Prohibit new sources of odors that have the potential to result in frequent odor complaints unless it can be shown that potential odor complaints can be mitigated where feasible. Prohibit sensitive receptors from locating near odor sources where frequent odor complaints would occur, unless it can be shown that potential odor complaints can be mitigated where feasible.

The following policies are consistent with the SJVAPCD Air Quality Guidelines for General Plans and are intended to integrate land use planning, transportation planning, and air quality planning to make the most efficient use of public resources and to create a healthier and more livable environment:

- y. Consider air quality when planning the land uses and transportation systems to accommodate the expected growth in this community.
- z. All transportation improvement projects to be included in regional transportation plans (RTP, RTIP, CMP, etc.) should be consistent with the air quality goals and policies of the General Plan.
- aa. Consult with transit providers to determine project impacts on long-range transit plans and ensure that impacts are mitigated where feasible.
- bb. Work with the Housing Authority, transit providers, and developers to encourage the construction of low-income housing developments that use transit-oriented and pedestrian-oriented design principles.
- cc. Work with Caltrans and the Regional Transportation Planning Agency to minimize the air quality, mobility, and social impacts of large scale transportation projects on existing neighborhoods.

The following policies are consistent with the SJVAPCD Air Quality Guidelines for General Plans and are intended for public facilities and operations to provide a model for the private sector in implementing air quality programs:

- dd. Implement employer-based trip reduction programs for their employees.
- ee. Replace or convert conventional fuel vehicles with clean fuel vehicles as feasible, within the City's motorpool fleet, considering budgetary constraints.
- ff. Support the use of teleconferencing in lieu of employee travel to conferences and meetings when feasible.

The following policies are intended to ensure that new development provides the facilities and programs that improve the effectiveness of transportation control measures and congestion management programs:

- gg. Work with employers and developers to provide employees and residents with attractive, affordable transportation alternatives.
- hh. Work to establish public / private partnerships to develop satellite and neighborhood work centers for telecommuting.
- ii. Encourage the development of state of the art communication infrastructure linked to the rest of the world.

The following policies are consistent with the SJVAPCD Air Quality Guidelines for General Plans and are intended to reduce emissions of PM₁₀ and other particulates with local control potential:

- jj. Reduce particulate emissions from construction, grading, excavation, and demolition to the maximum extent feasible in accordance with the requirements of SJVAPCD Regulation VIII. Regulation VIII was adopted to reduce the amount of particulate matter suspended in the atmosphere as a result of emissions generated from anthropogenic (man-made) fugitive dust sources.
- kk. Require all access roads, driveways, and parking areas serving new commercial and industrial development to be constructed with materials that minimize particulate emissions in accordance with the requirements of SJVAPCD Regulation VIII and are appropriate to the scale and intensity of use.
- ll. Reduce PM₁₀ emissions from City-maintained roads to the maximum extent feasible.

The following controls are required to be implemented at all construction sites:

- mm. Effectively stabilize dust emissions using water, chemical stabilizer / suppressant, cover with a tarp or other suitable cover or vegetative ground cover, all disturbed areas, including storage piles, which are not being actively utilized for construction purposes,
- nn. Effectively stabilize dust emissions using water or chemical stabilizer / suppressant, all onsite unpaved roads and off-site unpaved access roads.
- oo. Effectively control fugitive dust emissions utilizing application of water or by presoaking all land clearing, grubbing, scraping, excavation, land leveling, grading, cut & fill, and demolition activities.
- pp. Wet all exterior surfaces of buildings that are more than six stories tall during demolition.
- qq. When materials are transported off site, cover all materials, or effectively wet them to limit visible dust emissions, and maintain at least six inches of freeboard space from the top of the container.
- rr. Limit operations or expeditiously remove the accumulation of mud or dirt from adjacent public streets at the end of each workday (the use of dry rotary brushes is expressly prohibited except where preceded or accompanied by sufficient wetting to limit the visible dust emissions.) (Use of blower devices is expressly forbidden.)
- ss. Following the addition of materials to, or the removal of materials from, the surface of outdoor storage piles, effectively stabilize said piles for fugitive dust emissions utilizing sufficient water or chemical stabilizer / suppressant.
- tt. Within urban areas, immediately remove trackout when it extends 50 or more feet from the site and at the end of each workday.
- uu. Prevent carryout and trackout for any site with 150 or more vehicle trips per day.

The following measures should be implemented at construction sites when required to mitigate significant PM₁₀ impacts (note, these measures are to be implemented in addition to Regulation VIII requirements):

- vv. Limit traffic speeds on unpaved roads to 15 mph; and,
- ww. Install sandbags or other erosion control measures to prevent silt runoff to public roadways from sites with a slope greater than one percent (1%).

The following measures are strongly encouraged at construction sites that are large in area, located near sensitive receptors, or which for any other reason warrant additional emissions reductions:

- xx. Install wheel washers for all exiting trucks, or wash off all trucks and equipment leaving the site;
- yy. Install wind breaks at windward side(s) of construction areas;
- zz. Suspend excavation and grading activity when winds exceed 20 mph (regardless of windspeed, an owner/operator must comply with Regulation VIII's 20 percent (20%) opacity limitation); and
- aaa. Limit the area subject to excavation, grading, and other construction activity at any one time.

I. ENERGY CONSERVATION

1. Overview

The California Environmental Quality Act identifies energy conservation as a goal in community development. Under the CEQA Guidelines, a project may have a significant environmental impact if it will "use fuel, water, or energy in a wasteful manner." The following policies employed by the City provide sufficient mitigation for those impacts.

2. Energy Conservation Policies

- a. Require shade trees, where feasible and appropriate, in landscape plans for all new development proposals. Mature trees have lower water needs. Develop shade-tree specifications for development projects, including appropriate types of trees (size, deciduous or evergreen, absence or lower branches, etc), locations (e.g., distance from structures), density (i.e. within a subdivision or parking lot), and orientation (trees on the west side of a building generally provide the most benefit) for use in landscape plans.
- b. Require the planting of large-canopy species in new development areas in such a way that they grow to full size without damaging streets and sidewalks (including, but not limited to, deep watering until roots are established, proper fertilizers, root barriers, and structured soils).
- c. Discourage removal of street trees unless they are badly diseased and have become a threat to public safety. If a tree must be removed, it should be replaced no later than the end of the next planting season with a large-canopy species.

- d. The goal of the street tree maintenance program is to maintain trees in the best possible health by ensuring that newly planted trees are cared for in such a way as to prevent or minimize sidewalk and street damage (including, but not limited to, deep watering until roots are well established, proper fertilizers, root barriers, and structured soils), pruning to remove mistletoe, pruning to prevent the tree from leaning, and using measures to control disease.
- e. Encourage the Modesto and Turlock Irrigation Districts to establish and promote a program whereby existing residential and commercial building owners are provided incentives to increase the number of shade trees in developed parts of the City. Provide information on types of trees and planting locations to maximize energy savings from the program.
- f. Coordinate with the Modesto and Turlock Irrigation Districts (for electricity) and Pacific Gas & Electric Company (for natural gas) on all new, large-scale, development proposals.
- g. Encourage the use of solar energy systems for residential, agricultural, parks, public buildings, and business purposes as provided in Government Code Section 65850.5.
- h. Design and orient new buildings and lots in new subdivisions to maximize solar energy.
- i. Approve applications for solar energy systems in accordance with State law.
- j. Support the State of California's commitment to the "Renewable Portfolio Standard," which requires electrical utility providers to obtain one-third (33%) of their electricity from renewable energy sources by 2020.
- k. Reduce heat gain from pavement by minimizing street rights-of-way and pavement widths. Reinstate the use of parkway strips with trees, where feasible, to provide shading of streets.
- l. Consider purchasing clean-fuel / alternative-fuel fleet vehicles.

The following policies are intended to encourage the use of energy conservation features and low-emission equipment for all new residential and commercial development:

- m. Work with the local energy providers and developers on voluntary incentive-based programs to encourage the use of energy efficient designs and equipment.
- n. Work with the local building industry, utilities, and the SJVAPCD to promote enhanced energy conservation standards for new construction.
- o. Encourage new residential, commercial, and industrial development to reduce air quality impacts from area sources and from energy consumption.

J. PUBLIC SAFETY

1. Overview

The physical urban development envisioned in Chapter III must consider certain public safety issues, including Seismic and Geologic Hazards, Flood Hazards, Fire Hazards, and Miscellaneous Issues such as landslides, erosion, expansive soils, subsidence, and evacuation routes. The policies presented in these sections (below) are intended to comply with the pertinent safety element requirements of State law.

The City of Modesto (City) has adopted a Local Hazard Mitigation Plan (LHMP) in order to receive Federal Emergency Management Association pre-disaster mitigation and post-disaster Hazard Mitigation Grant Program project funding for declared disasters. This LHMP covers the City, including all City Departments and the portion of the Industrial Fire Protection District that currently contracts with the Modesto Fire Department for fire suppression services. The LHMP provides the City's blueprint for reducing the potential losses from natural disasters, which includes goals, mitigation actions, and an implementation strategy. This plan will also serve as the basis for the state to provide technical assistance and to prioritize project funding.

According to the City's LHMP, the top five natural hazards for Stanislaus County are earthquake, flood, dam failure, wildfire, and landslide. The City's LHMP covers each of these natural hazards. Additional hazards, both natural and manmade, will be included as this plan is reviewed and updated. The LHMP will be monitored, evaluated, and updated every three years, or more frequently as the need arises. The policies below reflect information in the City's LHMP. Reference the LHMP for a full list of its goals, mitigation actions, and implementation strategy.

General Public Safety Policies

- a. Support the LHMP and ensure that the LHMP will be monitored, evaluated, and updated every three years or more frequently as the need arises.
- b. Ensure that all new development is designed to reduce potential safety and health hazards.
- c. Ensure that emergency services are delivered quickly and safely.
- d. Support efforts to improve levels of emergency response.
- e. Ensure preparation for appropriate response to disasters, both natural and manmade, that would disrupt the community.

K. SEISMIC AND GEOLOGICAL HAZARDS

Introduction

There are no known geologic faults in the Planning Area or in the valley portion of Stanislaus County. The nearest faults are the Tesla-Ortigalita Fault in the Diablo Range, and the Bear Mountain and Melones Faults in the eastern part of Stanislaus County – both of which have been inactive for 150 million years. There are no Alquist-Priolo Special Studies Zones in Modesto.

Like any other place in the San Joaquin Valley, the area could be affected by earthquakes along faults in other parts of the region and elsewhere in California. Recorded earthquakes from faults outside the Modesto Urban Area have in the past produced ground shaking to an intensity of VI on the Modified Mercalli Intensity Scale of 1931. According to the State Division of Mines and Geology, ground shaking to an intensity of VII is possible in the future.

A maximum-intensity earthquake is capable of causing considerable damage in ordinary structures. Most injuries, loss of life, and property damage during earthquakes result from structural failures due to ground shaking. Damage from ground shaking is a combined function of the structural integrity of the buildings before the earthquake, and the quality of underlying soils or bedrock.

Older structures generally were not built to withstand the lateral stress imposed by the ground shaking of a major earthquake. Generally, the older the structure, the less likely it is to resist an earthquake. This applies particularly to buildings having walls of non-reinforced brick held together by sand-lime mortar and in general to all unreinforced multi-story buildings.

As part of implementing Public Resources Code Section 2690 et seq. (the Seismic Hazards Mapping Act), the California Division of Mines and Geology is establishing a program to map liquefaction and landslide potential in various parts of the state. The Division of Mines and Geology will provide – in addition to maps – policies and criteria regarding the responsibilities of cities, counties, and state agencies pursuant to development in designated seismic hazard areas.

Seismic and Geological Hazard Policies

Although the Modesto Urban Area is relatively free from recent seismic activity, the Uniform Building Code places all of California in Seismic Risk Zone 3, which means that all new structures must be designed to resist collapse in an intensity 8.0 earthquake. Further, the following policies are adopted throughout the General Plan Area:

- a. Continue to use building codes as the primary tool for reducing seismic risk in structures. The current version of the California Building Code, as adopted by the City of Modesto, is intended to ensure that buildings resist major earthquakes of the intensity or severity of the strongest experience in California, without collapse, but with some structural as well as nonstructural damage. In most structures, it is expected that structural damage could be limited to repairable damage, even in a major earthquake.
- b. Require all new buildings in the City to be built under the seismic requirements of the current adopted California Building Code.
- c. Continue to explore measures to induce building owners to upgrade and retrofit structures to render them seismically safe.
- d. Enforce provisions of the Alquist-Priolo Earthquake Fault Zoning Act.

L. FLOODING HAZARDS

Introduction

Flooding is one of the costliest natural hazards in California. In the Modesto area the problem of flooding, defined as breaching of the banks of a natural water course, is limited to property along Dry Creek and the Stanislaus and Tuolumne Rivers. Completion of the Don Pedro Dam effectively reduced exposure to flood damage on both the Tuolumne River and the lower reaches of Dry Creek; construction of the New Melones dam has significantly reduced the chance of flood damage on the Stanislaus River. Portions of the Stanislaus River still flood to the extent that there can be crop damage, but the U.S. Army Corps of Engineers has purchased flowage easements to accommodate this periodic inundation. Figure VII-2, “Flood Potential Diagram,” describes certain areas to be studied further to ensure that new development is not located within areas potentially inundated by the “100 year flood,” as defined by the Federal Emergency Management Agency.

Programs for reducing flood losses include both structural and non-structural approaches, some directed at preventing floods, others at controlling those that cannot be prevented. The Don Pedro Dam on the Tuolumne River is a method of prevention. Channel maintenance and development is an additional means of flood prevention. Nonstructural measures include flood forecasting, zoning, exclusions from designated floodways, building code requirements, and evacuation from flood areas. In the urban area of Modesto, nonstructural approaches to minimize flood hazards seem to be the most effective approach. To this end the City adopts the policies shown below.

Flood Hazard Policies—Baseline Developed Area

The Department of Water Resources (DWR) has prepared 200-Year floodplain data, displayed on Figure VII-2. The Federal Emergency Management Agency’s (FEMA) 100-year floodplain data is also shown on Figure VII-2. The Central Valley Flood Protection Board is responsible for flood protection along the Sacramento and San Joaquin Rivers, their tributaries, and related areas. The flood hazard zone policies below are intended to protect life and property. Current State laws will be implemented with respect to development in floodplains.

- a. Approve new urban development only when the City determines via “findings” that it is protected from “200-year” floods and otherwise complies with the City’s Floodplain Management Ordinance (Title 9, Chapter 4 of the Modesto Municipal Code).
- b. Undeveloped floodway areas as well as the Tuolumne River Regional Park Master Plan, the Dry Creek Master Plan, the Tuolumne River Comprehensive Planning District (CPD), and the Dry Creek CPD should be preserved for undeveloped and non-urban use, as provided in the City’s Floodplain Management Ordinance.
- c. Appropriate emergency plans for the safe evacuation of people from areas subject to inundation from dam failure should be reviewed and periodically updated. The City Fire Department, Police Department, and Public Works Department should continue to work with other jurisdictions to develop evacuation routes to be used in case of dam failure. Evacuation routes will serve all of the jurisdictions in the County.
- d. Maintain the floodplain management ordinance to ensure that flood insurance can be made available to qualified property owners through state and federal programs.

- e. Support the Federal Emergency Management Agency (FEMA) Flood Insurance Program so that residents who qualify may purchase such protection. Property owners whose property is located within certain areas identified by FEMA as flood hazard areas may purchase insurance against flood damage.
- f. Discourage development in areas susceptible to floods, except as provided under the Flood Insurance Program and City Floodplain Management Ordinance.

Flood Hazard Policies—Planned Urbanizing Area

- g. All of the Flood Hazard Policies adopted for the Baseline Developed Area apply equally within the Planned Urbanizing Area.
- h. The environmental review document for any Comprehensive Planning District located within or including any portion of a “Flood Potential Study Area” on Figure VII-2 should include a Flood Hazard Analysis developed to mitigate all of the Flood Hazard impacts identified in the Master Environmental Impact Report.
- i. The results of the Flood Hazard Analysis should be incorporated into the project design of any Specific Plan. The Specific Plan shall prohibit development within the flood channel, consistent with the City’s Floodplain Management Ordinance. Where possible, the Specific Plan shall minimize development within the floodplain, consistent with the City’s Floodplain Management Ordinance, by such means as providing setbacks from flood zones designating areas within the flood zones for low-intensity development only, or providing for setback levees. When levee improvements are necessary to achieve flood protection, the Specific Plan shall include adequate funding for those improvements. Funding mechanisms may include special assessments or special taxes for both capital and maintenance costs, and should not rely solely on impact fees. The City may work with other agencies to provide these improvements.

M. FIRE HAZARDS

Fire protection policies within the City of Modesto are contained in Chapter VI and below. Fire hazards in Modesto are primarily associated with urban fires. Urban fires may be defined as fires that occur in commercial, industrial, and residential structures. Most urban fires are caused by human activity, and may result in property damage, injuries, and loss of life.

Over the years, building codes have been established and utilized to reduce the frequency and severity of urban fires. Electrical construction standards have been improved, building separation requirements have been implemented, and fire walls are now required to separate closely sited structures and properties. Buildings that are highly susceptible to fire may also have automatic sprinkler systems installed. Development standards established by the City of Modesto and Stanislaus County zoning codes, including setback and access requirements, also help to minimize urban fire hazards. However, despite these measures, older buildings that do not meet current building codes and/or were constructed prior to the implementation of protective zoning may represent a significant fire hazard.

Fire Hazard Policies

a. Peak Load Water Supply

Peak-load water supply is defined as “the supply of water available to meet both domestic water and firefighting needs during the particular season and time of day when domestic water demand on a water system is at its peak.” Ensure that adequate water fire-flows are maintained throughout the City and shall regularly monitor fire-flows to ensure adequacy. New development shall comply with the minimum fire-flow rates, as presented in the California Fire Code.

b. Minimum Road Widths and Clearances Around Structures

Fire apparatus access roads to and around structures should comply with the minimum requirements in Chapter 5 of the California Fire Code.

c. Miscellaneous

The following policies will help to minimize the hazardous conditions that might cause loss of life and property.

- (1) Enforce state-mandated Health and Safety Codes, including but not limited to the current adopted edition of the California Fire Code, California Building Code, California Mechanical Code, California Electrical Code, California Plumbing Code, Title 19, Title 24, and the City of Modesto Municipal Code.
- (2) Design and maintain roads so as to ensure adequate access in hazardous conditions.
- (3) Require all new development to have adequate water to meet the established fire-flow standards.
- (4) Encourage funding sources that help to maintain adequate on-going fire services for both existing and new development.
- (5) The City of Modesto may negotiate with affected fire protection districts when an annexation to the City is contemplated, and before it is finalized, to determine whether the boundary change may result in the erosion of fire protection or other emergency services. Any resulting agreements must be approved by City Council and the governing board of the fire protection district prior to City Council approval of the annexation. Options range from the consolidation of the fire protection district into Modesto City Fire to revenue sharing.

N. MISCELLANEOUS ISSUES

Landslides

A landslide is the downhill movement of masses of earth material under the force of gravity. Movement may be rapid or so slow that a change of position can be noted only over a period of weeks or years. Landslides are a common problem in hillside areas; however, most of Modesto is flat and there is very limited exposure to this type of hazard. Development along the banks of Dry Creek and the Stanislaus and Tuolumne Rivers could be subject to this type of hazard. Erosion is controlled through the following measures:

- a. Any construction that occurs as a result of the General Plan must conform with the current UBC regulations, which address seismic safety of new structures and slope requirements. As appropriate, require a geotechnical analysis prior to tentative map approval in order to ascertain site-specific subsurface information necessary to estimate foundation conditions. These geotechnical studies should reference and make use of the most recent regional geologic maps available from the California Department of Conservation Division of Mines and Geology.
- b. Discourage development on lands that are subject to landslides.
- c. New public roads in areas subject to landslides should be designed to minimize landslide risks.
- d. All building permits should be reviewed to ensure compliance with the current adopted edition of the California Fire Code, California Building Code, California Mechanical Code, California Electrical Code, California Plumbing Code, Title 19, Title 24, and the City of Modesto Municipal Code.

Erosion

Erosion generally involves two somewhat distinct problems – the wear and removal of materials from one site and deposition at another. The removal of soils through erosion can be damaging in situations of sheet and gully erosion of land surfaces, the wind-blown denudation of lands, and the erosion of stream courses and banks. Deposition damage affects floodplains, rivers, lakes, and reservoirs, and may clog drainage structures. Human activities frequently accelerate erosion-related damages and losses.

Erosion in the Modesto Urban Area is a nominal concern and is limited to areas adjacent to Dry Creek and the Stanislaus and Tuolumne Rivers. The City is primarily concerned with bank protection in these areas. The responsibility for erosion control belongs to the landowner or developer who modifies the land surface, and is monitored and controlled by the community through the grading requirement of the Building Code and controls on the subdivision of land. The erosion control program shall be consistent with the following measures:

- e. Control construction-related fluvial erosion by a construction erosion control program filed with the City's Public Works Department and kept current throughout site development.

- f. Include “best management practices” in the erosion control program, as appropriate, given the specific circumstances of the site and/or project. Table V-9-2 in the Master Environmental Impact Report presents examples of best management practices.
- g. Design sediment control basins to capture eroded sediments and contain them on the project sites consistent with the criteria outlined in Table V-9-3 in the Master Environmental Impact Report.

Expansive Soils

Expansive soils are earth materials that greatly increase in volume when they absorb water and shrink when they dry out. When buildings are placed on expansive soils, foundations may rise each wet season and fall each dry season. Movement may vary under different parts of a building with the results that foundations crack, various structural portions of the building are distorted, and doors and windows are warped so that they do not function properly. In the Modesto urban area, there is low exposure to this type of problem, which can be easily and reasonably controlled by the adopted Uniform Building Code.

Subsidence

Subsidence of the land surface, as a result of the activities of man, has been occurring in California for many years. Subsidence can be divided on the basis of causative mechanisms into four types: groundwater withdrawal, gas and oil withdrawal, hydrocompaction from irrigation, and peat oxidation. Groundwater withdrawal subsidence is the most extensive and has been the most costly of the four types of subsidence in California. Based upon all information available, the Modesto Urban Area is free from subsidence problems.

Evacuation Routes

Figure VII-4 identifies Emergency Evacuation Routes, as required by Section 65302(g) of the Government Code. The following policies are adopted.

- h. Promote public awareness of the following local routes for the public’s use in evacuating the City in the event of an emergency:
 - (1) State Highways 99, 132, 219, & 108
 - (2) Briggsmore Avenue
 - (3) Claus Road
 - (4) Standiford/Sylvan Avenue
 - (5) Scenic Drive
 - (6) Pelandale Avenue
 - (7) Ninth Street
 - (8) Paradise Road
 - (9) Carpenter Road
- i. City plans and policies should not interfere with any emergency evacuation and response plans. This includes the continued maintenance of adequate police and fire services, and identified emergency evacuation routes (Figure VII-3).
- j. Ensure the provision of adequate and accessible evacuation routes.